L Number	Hits	Search Text	DB	Time stamp
1	5575	((424/439) or (514/909-911) or (426/2,74,567,578,575)).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:43
2	768	low adj methoxylated adj pectin or alginate and (((424/439) or (514/909-911) or (426/2,74,567,578,575)).CCLS.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:43
3	732	(low adj methoxylated adj pectin or alginate) and (((424/439) or (514/909-911) or (426/2,74,567,578,575)).CCLS.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:43
4	534	((low adj methoxylated adj pectin or alginate) and (((424/439) or (514/909-911) or (426/2,74,567,578,575)).CCLS.)) and calcium	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:40
5	243	((low adj methoxylated adj pectin or alginate) and (((424/439) or (514/909-911) or (426/2,74,567,578,575)).CCLS.)) and calcium and viscosity	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:40
6	226	(((low adj methoxylated adj pectin or alginate) and (((424/439) or (514/909-911) or (426/2,74,567,578,575)).CCLS.)) and calcium and viscosity) and @ay<2002	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:41
7	6930	((424/439) or (514/909-911) or (426/2,74,567,578,575,590)).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:43
8	867	low adj methoxylated adj pectin or alginate and (((424/439) or (514/909-911) or (426/2,74,567,578,575,590)).CCLS.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:43
9	834	(low adj methoxylated adj pectin or alginate) and (((424/439) or (514/909-911) or (426/2,74,567,578,575,590)).CCLS.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:44
10	255	((low adj methoxylated adj pectin or alginate) and (((424/439) or (514/909-911) or (426/2,74,567,578,575,590)).CCLS.)) and calcium and viscosity and @ay<2002	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:44
-	4	(("4784861") or ("5068109")).PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:37
-	2	"9633694"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:26
-	3	"9959542"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:28

-	4	(("5358702") or ("5068109")).PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:30
-	43	low adj methoxylated adj pectin	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:42
-	27	low adj methoxylated adj pectin and calcium	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:31
-	286763	(("426") or ("424") or ("514")).CLAS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:41
-	64805	pectin or alginate	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:41
-	511096	viscosity	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:41
-	9718	((("426") or ("424") or ("514")).CLAS.) and (pectin or alginate) and viscosity	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:41
-	48151	low adj methoxylated adj pectin or alginate	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 13:39
-	7763	((("426") or ("424") or ("514")).CLAS.) and (low adj methoxylated adj pectin or alginate) and viscosity	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:43
-	5705	((("426") or ("424") or ("514")).CLAS.) and (low adj methoxylated adj pectin or alginate) and viscosity and calcium	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:43
-	5236	((("426") or ("424") or ("514")).CLAS.) and (low adj methoxylated adj pectin or alginate) and viscosity and calcium and (liquid or beverage or drink)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:45
-	338	(((("426") or ("424") or ("514")).CLAS.) and (low adj methoxylated adj pectin or alginate) and viscosity and calcium and (liquid or beverage or drink)) and obesity	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:45
-	3770	(((("426") or ("424") or ("514")).CLAS.) and (low adj methoxylated adj pectin or alginate) and viscosity and calcium and (liquid or beverage or drink)) and @ay<2002	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:46

-	193	((((("426") or ("424") or ("514")).CLAS.) and (low adj methoxylated adj pectin or alginate) and viscosity and calcium and (liquid or beverage or drink)) and obesity and @ay<2002	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/10 08:46

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         63477 LOW
           725 METHOXY
          5103 PECTIN
            43 LOW(W)METHOXY(W)PECTIN
L1         2166 ALGINATE OR LOW(W)METHOXY(W)PECTIN

=> s l1 and calcium and viscosity
          9396 CALCIUM
         13151 VISCOSITY
L2           23 L1 AND CALCIUM AND VISCOSITY

=> d l2 all 1-23

L2   ANSWER 1 OF 23  FSTA  COPYRIGHT 2004 IFIS on STN
AN   2003:H2618   FSTA
TI   Soft drink replacer.
IN   Hennepe, F. G. J. te; Lange, M. E. H. de; Laere, K. M. J. van; Navarro y
     Koren, P. A.
PA   NV Nutricia; Nutricia, Zoetermeer, Netherlands
SO   United States Patent Application Publication, (2003)
PI   US 2003134027        A1
PRAI US @@@@-22372           20011220
DT   Patent
LA   English
AB   A soft drink replacer for treating overweight individuals or preventing
     the condition is described, which has a pH >5, viscosity <50
     mPas at a shear rate of 100 s.sup.-.sup.1 and viscosity of
     ≥125% of the above value at pH3 and 37°C.  Caloric density
     is 0-500 kcal/l.  The beverage contains 0.01-5 weight% of pectin and/or
     alginate, and 0.01-3 weight% Ca.
CC   H (Alcoholic and Non-Alcoholic Beverages)
CT   ALGINATES; BEVERAGES; CALCIUM; DIETETIC FOODS; PATENTS; PECTIC
     SUBSTANCES; CA

L2   ANSWER 2 OF 23  FSTA  COPYRIGHT 2004 IFIS on STN
AN   2001(02):T0145   FSTA
TI   Effect of oxidized starch on calcium pectinate gels.
AU   Abdulmola, N. A.; Richardson, R. K.; Morris, E. R.
CS   Correspondence (Reprint) address, E. R. Morris, Dep. of Food Sci., Food
     Tech. & Nutr., Univ. Coll. Cork, Cork, Republic of Ireland.  Tel. +353 21
     490 3625.  Fax +353 21 427 0001.  E-mail ed.morris(a)ucc.ie
SO   Food Hydrocolloids, (2000), 14 (6) 569-577, 22 ref.
     ISSN: 0268-005X
DT   Journal
LA   English
AB   Effect of oxidized starch on rheological properties of calcium
     pectinate gels were investigated using small-deformation oscillation
     rheology.  Gels were prepared by mixing calcium pectinate
     (produced using a low-methoxy pectin) and
     oxidized starch solutions, followed by controlled cooling from
     95°C; storage modulus (G'), loss modulus (G''), loss tangent
     (tanδ) and complex dynamic viscosity (η*) were
     measured.  At starch concentration <32% (min. critical concentration for
gelation of
     oxidized starch alone under the same experimental conditions) large
     reductions were detected in G' for the gels, attributed to calcium
```

pectinate precipitation resulting from thermodynamic incompatibility of the 2 polymers.
CC T (Additives, Spices and Condiments)
CT GELS; PECTIC SUBSTANCES; RHEOLOGICAL PROPERTIES; STARCH; MODIFIED STARCHES; PECTINS

L2 ANSWER 3 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 2000(06):P0993 FSTA
TI Textural properties of a model aqueous phase in low fat products. I. **Alginate**, caseinate and starch in isolation, and in starch containing binary mixtures.
AU Roberts, S. A.; Kasapis, S.; Santos-Lopez, I. de
CS Correspondence (Reprint) address, S. Kasapis, Dep. of Food Sci. & Nutr., Coll. of Agric., Sultan Qaboos Univ., PO Box 34, Al-Khod 123, Sultanate of Oman. Fax +968 513 418. E-mail stefan(a)squ.edu.om
SO International Journal of Food Science & Technology, (2000), 35 (2) 215-226, 33 ref.
ISSN: 0950-5423
DT Journal
LA English
AB Effects of addition of increasing concentration of Ca on textural properties of **alginate**, caseinate and starch dispersions were investigated to provide a baseline for further work on mixtures of these biopolymers. **Alginate**, caseinate and starch were used to develop model aqueous phases for low fat spreads and soft cheeses. Increasing concentration of Ca transformed the **alginate** solutions into gels having a maximum rigidity at 1000 and 300 p.p.m. Ca.sup.2.sup.+ for 2.0 and 0.5% of the polysaccharide, respectively. Gelation was achieved by cooling which unveiled a 2 stage process of network formation. Caseinate solutions (12%) showed an increased **viscosity** with a rising Ca.sup.2.sup.+ concentration up to 2250 p.p.m., above which **viscosity** decreased. Starch (2.5%) exhibited a slight loss in storage modulus (G') with increasing levels of Ca. Texture of the **alginate** starch mixture was determined by the **alginate** component (2 stage gelation process), but inverted to that of starch at high levels of added Ca.sup.2.sup.+. In the absence of the counterion, casein had an adverse effect on strength and cohesion of the starch networks. At 400 p.p.m. Ca.sup.2.sup.+, the protein formed a continuous liquid-like phase which suspended the starch inclusions, thus dictating the textural properties of the mixture. Caseinate continued to dominate up to 1200 p.p.m. Ca.sup.2.sup.+, at which point the starchy matrix influenced the system once more. Finally, at higher levels of the counterion, the sample phase inverted back to a starch continuous gel.
CC P (Milk and Dairy Products)
CT ALGINATES; **CALCIUM**; CASEINATES; CHEESE VARIETIES; DISPERSIONS; FATS; GELATION; RHEOLOGICAL PROPERTIES; SPREADS; STARCH; TEXTURE; CA; FATS LOW SPREADS; MODELLING; SOFT CHEESE

L2 ANSWER 4 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1998(08):P1352 FSTA
TI Spectrophotometric quantification of lactic bacteria in **alginate** and control of cell release with chitosan coating.
AU Zhou, Y.; Martins, E.; Groboillot, A.; Champagne, C. P.; Neufeld, R. J.
CS Correspondence (Reprint) address, R. J. Neufeld, Dep. of Chem. Eng., Queen's Univ., Kingston, Ont. K7L 3N6, Canada
SO Journal of Applied Microbiology, (1998), 84 (3) 342-348, 25 ref.
ISSN: 1364-5072
DT Journal
LA English
AB [Immobilization of lactic starters could be potentially useful in the dairy industry.] Lactococcus lactis subsp. cremoris was entrapped within a **calcium alginate** matrix, an in situ spectroscopic method for monitoring cell population in Ca **alginate** beads is described. The intracapsular cell population can be estimated by measuring the optical density of beads containing cells, using cell-free

beads as reference, or by measuring absorbance of a liquified bead suspension. **Alginate** beads and beads coated with chitosan type I, II and I and II mixtures, were examined for cell release. Lower **viscosity** chitosan (type I) coatings reduced cell release by a factor of 100 from 10.sup.5 to 10.sup.3 cfu/ml after 6 h of fermentation. Reuse of chitosan I coated **alginate** beads also showed a reduction in cell release by a factor of 100. Cell loading and initial cell growth within the beads greatly affected cell release. Reducing the initial cell release would lower the overall levels of cell release throughout the fermentation. Compared to non-immobilized cultures, a 20-40% reduction in the lactic acid production rate was observed for **alginate** beads and chitosan I coated **alginate** beads, respectively. This reduction can be compensated for by increasing the intracapsular cell loading during immobilization, or before the onset of fermentation.

CC P (Milk and Dairy Products)

CT IMMOBILIZED CELLS; LACTOCOCCUS; SPECTROSCOPY

L2 ANSWER 5 OF 23 FSTA COPYRIGHT 2004 IFIS on STN

AN 1997(05):T0007 FSTA

TI Role of acetylation on metal induced precipitation of alginates.

AU Lee, J. W.; Ashby, R. D.; Day, D. F.

CS Correspondence (Reprint) address, D. F. Day, Dep. of Microbiol., Audubon Sugar Inst., Louisiana State Univ., Baton Rouge, LA 70803, USA

SO Carbohydrate Polymers, (1996), 29 (4) 337-345, 38 ref.
ISSN: 0144-8617

DT Journal

LA English

AB Effects of acetylation on solution **viscosity** and metal induced precipitation of bacterial and seaweed alginates were studied. Acetylation altered the solution viscosities and precipitation characteristics of alginates from the brown seaweed Marcocystis pyrifera and the bacterium Pseudomonas syringae subsp. phaseolicola ATCC 19304. Acetylation of the seaweed **alginate** resulted in a 10.6% increase in mol. weight and a 4% increase in **viscosity** at 30°C. At 30°C, the comparative **viscosity** of the acetylated bacterial **alginate** was approx. 38% higher than that of the deacetylated polymer. It is suggested that this increase in **viscosity** may be due to a higher degree of acetylation, and the formation of a more extended ribbon-like tertiary structure of the bacterial polymer. The presence of acetyl groups decreased the ability of both polymers to bind with **calcium** but increased their ability to bind with ferric ions (Fe.sup.3.sup.+). The lower affinity of acetylated **alginate** for **calcium** confers a more stable state on the polymer, increasing its usefulness as an emulsifier and stabilizer. Results suggested that by controlling the degree of acetylation on **alginate** chains, it is possible to modify solution **viscosity** and cation induced precipitation of these polymers.

CC T (Additives, Spices and Condiments)

CT ALGINATES; SALTS; STABILIZERS; ACETYLATION

L2 ANSWER 6 OF 23 FSTA COPYRIGHT 2004 IFIS on STN

AN 1996(02):S0058 FSTA

TI High mannuronate alginates as binders in restructured beef.

AU Nielsen, H. T.; Hoegh, L.; Moller, A. J.

CS Dep. of Dairy & Food Sci., Royal Vet. & Agric. Univ., DK-1958 Frederiksberg C, Denmark

SO Journal of Muscle Foods, (1995), 6 (3) 271-282, 14 ref.
ISSN: 1046-0756

DT Journal

LA English

AB Three high mannuronate **alginate** types (Sobalg Fd 155, 176, and 275) were evaluated as binders in finely ground restructured beef (semitendinosus). Formulations with **alginate** levels 0.50-1.25% and **calcium** carbonate levels 0.10-0.25% were prepared, including

the acidulant glucono-δ-lactone (0.80%). In addition, Sobalg Fd 176 was evaluated in a coarsely ground restructured product using the same raw materials and ingredient levels. Among **alginate** types, the relatively high **viscosity** graded **alginate**, Sobalg Fd 176, resulted in the highest raw breaking strengths and lowest cooking loss ($P < 0.05$). When averaged across **alginate** types, increased raw breaking strengths were observed when the level of **alginate** was evaluated, providing the **calcium** carbonate level was ≥0.15%. In the coarsely ground product using Sobalg Fd 176, cooked tensile strength ranged from 11.6 N to 17.9 N, corresponding to a satisfactory bind. In both finely and coarsely ground restructured samples, cooking loss was reduced when **alginate** levels were elevated, and pH increased as a function of **calcium** carbonate level ($P < 0.05$). This study demonstrates that high mannuronate alginates, especially Sobalg Fd 176, can be used as binders in restructured beef products.

CC S (Meat, Poultry and Game)

CT ADDITIVES; ALGINATES; BEEF; MEAT SPECIFIC; SALTS; STABILIZERS; THICKNESS; BINDING AGENTS

L2 ANSWER 7 OF 23 FSTA COPYRIGHT 2004 IFIS on STN

AN 1995(11):P0183 FSTA

TI Effect of hydrocolloids on the **calcium** equilibrium in skimmilk.

AU Sui-Chen Lee; Hansen, P. M. T.

CS IFT Annual Meeting 1995; Dep. of Food Sci. & Tech., Ohio State Univ., Columbus, OH 43210, USA

SO (1995), p. 189

DT Conference

LA English

AB Effects of hydrocolloid stabilizers on the **calcium** equilibrium in skim milk were studied, using a resin contact time method (RCTM) and equilibrium dialysis. **Calcium** concentration was determined by AAS. RCTM was useful in study of direct changes in **calcium** equilibrium in milk systems and in milk containing stabilizer(s); presence of stabilizers caused an apparent increase in exchangeable **calcium** for short contact times, although it would be necessary to compensate for the increase in contact time due to increased **viscosity** caused by stabilizer addition. 0.05% ι-carrageenan caused an approx. 20% reduction in the dialysable form of **calcium**, whereas other stabilizers (xanthan gum, carboxymethylcellulose, locust bean gum, **alginate**) had no measurable effect. [Further abstracts from this Meeting can be traced via the FSTA author index, under IFT Annual Meeting 1995. See FSTA (1995) 27 10A6. From En summ.]

CC P (Milk and Dairy Products)

CT **CALCIUM**; DAIRY PRODUCTS; GUMS; MILK; MINERALS; STABILIZERS; THICKENERS; CA; HYDROCOLLOIDS; SKIM MILK

L2 ANSWER 8 OF 23 FSTA COPYRIGHT 2004 IFIS on STN

AN 1993(04):B0176 FSTA

TI Application of gravitational sedimentation to efficient cellular recycling in continuous alcoholic fermentation.

AU Maia, A. B. R. A.; Nelson, D. L.

CS Correspondence (Reprint) address, D. L. Nelson, Dep. de Bioquimica e Imunologia, Inst. de Ciencias Biol., Univ. Fed. de Minas Gerais, 30161-Belo Horizonte, MG, Brazil

SO Biotechnology and Bioengineering, (1993), 41 (3) 361-369, 28 ref. ISSN: 0006-3592

DT Journal

LA English

AB A mathematical model for sedimentation velocity in an inclined parallel plate sedimenter is proposed. Parameters of the alcoholic fermentation broth (cell density of Saccharomyces cerevisiae, density of the fermentation medium, **viscosity** of the broth at various ethanol and biomass contents) were determined experimentally. Sedimentation velocities were predicted under various operational conditions and

parameters, both of the broth (ethanol concentration and cell content) and the sedimenter prototype (length, distance between the plates, and slope). The proposed model for sedimentation velocity correlated well with experimental results of continuous sedimentation. 3 sedimenter prototypes were tested for efficiency of separation of yeast cells under conditions considered of interest for continuous alcoholic fermentation. A selective filter for the overflow composed of **calcium alginate** gel improved operation. A high operational stability, high separation efficiency (>98%), and adequate settler residence times (about 20 min) were attained. Operational results permitted operation of continuous alcoholic fermentation with cellular recycling effected exclusively by gravitational sedimentation, thus characterizing a process of industrial interest because of the operational simplicity and low operational and maintenance costs.

CC B (Biotechnology)

CT ALCOHOLS; BIOREACTORS; ETHANOL; FERMENTATION; FERMENTATION TECHNOLOGY; PRECIPITATION; SACCHAROMYCES; YEASTS; SEDIMENTATION

L2 ANSWER 9 OF 23 FSTA COPYRIGHT 2004 IFIS on STN

AN 1990(12):T0022 FSTA

TI Effect of formaldehyde pre-treatment on the intrinsic **viscosity** of **alginate** from various brown seaweeds.

AU Wedlock, D. J.; Fasihuddin, B. A.

CS Shell Res. Ltd., Sittingbourne Res. Cent., Sittingbourne ME9 8AG, UK

SO Food Hydrocolloids, (1990), 4 (1) 41-47, 9 ref.
ISSN: 0268-005X

DT Journal

LA English

AB Sodium **alginate** samples were extracted from brown seaweeds by various methods and the effect of extraction procedure on the intrinsic **viscosity** and, by implication, the mol. weight were studied. Pre-treating the weeds with formaldehyde and ethanol prior to extraction with sodium carbonate or extracting the weeds under neutral conditions with selected **calcium** ion sequestrants resulted in alginates with enhanced intrinsic viscosities. The intrinsic **viscosity** of **alginate** samples during extraction decreased significantly with increasing pH due to the presence of phenolic compounds. By isolating phenolic compounds with formaldehyde or extracting them with ethanol, degradation processes can be inhibited.

CC T (Additives, Spices and Condiments)

CT ALDEHYDES; ALGINATES; FORMALDEHYDE; RHEOLOGICAL PROPERTIES; SEAWEEDS; STABILIZERS; **VISCOSITY**

L2 ANSWER 10 OF 23 FSTA COPYRIGHT 2004 IFIS on STN

AN 1989(07):T0017 FSTA

TI Effect of acetylation on some solution and gelling properties of alginates.

AU Skjak-Braek, G.; Zanetti, F.; Paoletti, S.

CS Lab. for Marine Biochem., Norwegian Inst. of Tech., 7034 Trondheim, Norway

SO Carbohydrate Research, (1989), 185 (1) 131-138, 22 ref.
ISSN: 0008-6215

DT Journal

LA English

AB Acetylation [see preceding abstract] did not severely affect the mol. weight and polydispersity index of **alginate**, but it greatly enhanced swelling ability of **calcium** gels made from these polymers. Affinity of **alginate** for **calcium** ions was diminished by acetylation, as shown by the effect on circular dichroism spectra and by the decrease in gel strength. **Viscosity** data suggested that a modest degree of acetylation (d.a., up to about 11%) caused expansion of the molecular chain, whereas a higher d.a. generated more flexible polymers.

CC T (Additives, Spices and Condiments)

CT ADDITIVES; ALGINATES; GELATION; STABILIZERS; THICKENERS; ACETYLATION; GELLING

L2 ANSWER 11 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1987(11):T0002 FSTA
TI Alginates in the food industry.
AU Anon.
SO Food Review, (1987), 14 (2) 45, 47
DT Journal
LA English
AB The functions of various alginates (the structural polysaccharides from the Phaeophyceae) are discussed in relation to food products (with examples). Thickening, stabilizing and gelling properties and reactions with **calcium** are explained in the light of **alginate** composition, i.e. variations in the proportions and arrangement of guluronic and mannuronic acids in the polysaccharide chain. High G-type alginates form strong, brittle gels with good heat stability; high M-types form weaker, more elastic gels with good freeze-thaw stability. Mol. weight dictates the rheological properties of **alginate** solutions, the relationship being directly proportional. High **viscosity** alginates are more shear sensitive; introduction of Ca into an **alginate** solution increases shear sensitivity. Ca sequestrants affect system rheology. Control of gel formation by the use of temperature and sequestrants is also outlined.
CC T (Additives, Spices and Condiments)
CT ALGINATES; FUNCTIONAL PROPERTIES

L2 ANSWER 12 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1986(12):T0036 FSTA
TI Interactions of selected gums in solution and the effects of pH and common food ingredients on these interactions.
AU Kaletunic Gencer, G.
CS Univ. of Massachusetts, Amherst, Massachusetts 01002, USA
SO Dissertation Abstracts International, B, (1985), 46 (6) 1759: Order no. DA8517116, 160pp.
DT Journal
LA English
AB Interactions between components in the following gum mixtures: (i) carrageenan-guar gum, (ii) sodium carboxymethylcellulose-locust bean gum, (iii) sodium carboxymethylcellulose-locust bean gum, (iii) sodium carboxymethylcellulose-**alginate**, and (iv) gelatin-**alginate** were evaluated by rheological measurements in the concentration range 0.05-1%. Further studies examined the effect of pH (3-9), NaCl (0.1-1.0%), sucrose (10-40%), soy isolate (1-2.5%) and sodium and **calcium** caseinate (1-10%) on the **viscosity** of (i) and (ii). Results included the following. Synergism was shown in (i) and (ii), most notably at a mixing ratio of 1:1, whole (iii) displayed antagonism and (iv) exhibited synergism or antagonism depending on the mixing ratio. pH had no effect on apparent **viscosity** of (i), while (ii) showed highest **viscosity** near pH 6. Sucrose did not affect **viscosity** of (i) or (ii). NaCl did not affect **viscosity** of (i), but decreased that of (ii) up to NaCl concentration of 0.4%. All the proteins tested influenced the rheological behaviour of (i), but had no effect on (ii).
CC T (Additives, Spices and Condiments)
CT ADDITIVES; GUMS; PROTEIN PRODUCTS; PROTEINS; **VISCOSITY**; COMPONENTS INTERACTION; GUM MIXTURES

L2 ANSWER 13 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1984(03):J0541 FSTA
TI Coated coconut, method of preparation and icing therefrom.
IN Richter, G. W.
PA General Mills Inc.
SO United States Patent, (1983)
PI US 4386108
DT Patent
LA English

AB Improved coconut pieces coated with an impermeable coating of insoluble **calcium alginate**, and methods of preparing the pieces are described. Such pieces are especially suitable for incorporation into ready-to-spread frostings. The methods essentially comprise the steps of: (i) providing dehydrated coconut pieces having a moisture content of approx. 3.0-3.5% by weight; (ii) applying a dilute aqueous solution of a water soluble source of **calcium** ions sufficient to provide approx. ≤0.2% by weight **calcium** based on the dry weight of the coconut to form **calcium**-laden coconut pieces; (iii) drying to a moisture content of approx. 12-16% by weight; (iv) applying an aqueous solution of approx. ≤3% by weight low **viscosity** sodium **alginate** in amounts sufficient to provide approx. ≤0.90% **alginate** based on the dry weight of coconut pieces, so forming **alginate** encased coconut pieces; and (v) drying the pieces to final moisture content approx. <14% by weight The coated pieces when incorporated into coloured frosting exhibit minimal colorant and/or moisture migration.
CC J (Fruits, Vegetables and Nuts)
CT COATING; COCONUTS; PATENTS; TOPPINGS; COATED; COCONUT PIECES; FROSTINGS; PATENT

L2 ANSWER 14 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1983(07):A0490 FSTA
TI On the preparation of **calcium alginate** isotropic gels using water-soluble **calcium** salts.
AU Chimirov, Yu. I.; Kuyanova, I. V.; Braudo, E. E.; Tolstoguzov, V. B.
CS A. N. Nesmeyanov Inst. of Organo-Element Compounds, Moscow, USSR
SO Nahrung, (1982), 26 (9) 741-745, 13 ref.
DT Journal
LA English
SL German; Russian
AB Preparation of isotropic monolithic **calcium alginate** gels presents difficulties related to the rate of ion exchange reactions between sodium **alginate** and Ca ions. Preparation of such gels with a high-solubility Ca salt and with mechanical agitation (in comparison to the diffusion process) is discussed. Effects of NaCl concentration on the **viscosity** of the gel-forming system, and the firmness of the **calcium alginate** gel are considered. The highest **viscosity** of 1.5% **alginate** solution was achieved in the presence of NaCl at 0.1 mol/l. In titration of sodium **alginate** with CaCl.sub.2, maximum **viscosity** is achieved at approx. equal concentration of the 2 reagents. In the presence of 0.1M NaCl, the maximum **viscosity** is displaced towards higher Ca concentration **Viscosity** increases with increasing temperature over the range 20-80° C. Maximum hardness of **calcium alginate** gels was achieved after a structurization time of 3 days. Presence of NaCl in the system displaces the ion exchange reaction towards **calcium alginate** dissociation.
CC A (Food Sciences)
CT ALGINATES; **CALCIUM**; GELS; SALTS; **VISCOSITY**; WATER; **ALGINATE GEL SOLUTIONS**; **ALGINATE GELS**; CA; **CA ALGINATE GEL SOLUTIONS**; **CA ALGINATE GELS**; SOLUBLE # ISOTROPIC

L2 ANSWER 15 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1982(09):A0720 FSTA
TI Study of commodity properties of food emulsions. I. The effect of dispersion medium composition on kinetic stability of O/W emulsion containing proteins, acidic polysaccharides and **calcium** salts.
AU Semenov, S. G.; Braudo, E. E.; Yaroshenko, Yu. F.; Zharikova, G. G.; Tolstoguzov, V. B.
CS G. V. Plekhanov High School of Nat. Economy, Moscow, USSR
SO Nahrung, (1982), 26 (1) 21-29, 20 ref.
DT Journal

LA English
SL German; Russian
AB The effect of concentration of acidic polysaccharide and Ca.sup.2.sup.+ ions on the kinetic stability, **viscosity** and degree of dispersion of protein-containing oil-in-water emulsions was studied. Variation of kinetic stability of the emulsions studied is independent of dispersion composition. In a wide range of **calcium** acetate concentration a correlation is observed between kinetic stability and **viscosity** of emulsions at sodium **alginate** concentration in the dispersion medium ≥0.3%. The transition zone between liquid solution and gel is widened in the presence of sodium caseinate. Maximum kinetic stability is reached at **calcium** acetate and sodium **alginate** concentration of 1.0-1.2 and approx. 6.0, corresponding to optimum conditions for formation of homogenous crosslinked structures of **calcium** **alginate** and **calcium** caseinate.
CC A (Food Sciences)
CT EMULSIONS; PROTEINS; STABILITY; KINETIC # PROTEINS-CONTAINING; KINETICS

L2 ANSWER 16 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1982(05):H0848 FSTA
TI Improvement of organoleptic quality of fermented soybean beverage by additions of propylene glycol **alginate** and **calcium** lactate.
AU Sugimoto, H.; Nishio, M.; Horiuchi, T.; Fukushima, D.
CS Cent. Res. Lab., Kikkoman Corp., 399 Noda, Noda-shi, Chiba-ken 278 Japan
SO Journal of Food Processing and Preservation, (1981), 5 (2) 83-93, 10 ref.
DT Journal
LA English
AB A fermented soybean beverage having a low **viscosity**, 3.75 cP (crude protein 1.54% w/v; acidity 0.57% w/v as lactic acid) was prepared through a lactic acid fermentation of soymilk with Lactobacillus casei. During the fermentation process, an organoleptically undesirable powdery-gritty sensation developed, which could be effectively reduced by addition of propylene glycol **alginate** (PGA). However, the emulsion stability of the fermented product sometimes decreased when PGA was added. This defect could be corrected by addition of some mineral salts such as **calcium** lactate with PGA. As a result, a fermented soybean beverage with a smoother mouth feel, and of organoleptically high value was obtained.
CC H (Alcoholic and Non-Alcoholic Beverages)
CT ALGINATES; BEVERAGES; EMULSIFIERS; FERMENTED FOODS; GLYCOLS; SENSORY PROPERTIES; SOY PRODUCTS; **ALGINATE # FERMENTED**; FERMENTED PRODUCTS; ORGANOLEPTIC PROPERTIES; PROPYLENE GLYCOL; SOY BEVERAGES

L2 ANSWER 17 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1980(04):A0186 FSTA
TI [Rheological properties of the **calcium** **alginate**-potato starch hydrolysate-water system.]
Rheologische Eigenschaften des Systems Calciumalginat-Kartoffelstaerkehydrolysat-Wasser.
AU Tschimirov, J. I. [Chimirov, Yu. I.]; Kislova, T. V.; Brundo, E. E.; Schierbaum[Shirbaum], F. R.; Straschnenko[Strashnenko], E. S.; Tolstoguzov, V. B.; Augustat, S.; Chimirov, Yu. I.; Shirbaum, F. R.; Strashnenko, E. S.
CS Inst. for Primary Organic Compounds, Moscow, USSR
SO Nahrung, (1979), 23 (5) 503-510, 17 ref.
DT Journal
LA German
SL English; Russian
AB The rheological properties of liquid solutions and gels of sodium **alginate**, **calcium** gluconate and gelling maltodextrin were investigated and compared with the behaviour of pastes and gels of non-degraded potato starch. The dependence of the rheological properties upon the **calcium** gluconate concentration is extreme. A marked increase in the **viscosity** of the liquid solutions and maximum values for the

hardness and breaking strength of the gels are obtained at a **calcium** gluconate/sodium **alginate** ratio of 0.3. Breaking strength, elasticity and hardness of the maltodextrin-based gels are many times inferior to those of potato starch-based gels. The breaking strength, hardness and elasticity of maltodextrin gels are increased by the addition of sodium **alginate** and **calcium** gluconate, which increases their effectiveness when used in foods.
CC A (Food Sciences)
CT ACIDS; ALGINATES; **CALCIUM**; DEXTRINS; GELS; POTATOES; RHEOLOGICAL PROPERTIES; SODIUM; STARCH; **ALGINATE**; GLUCONATE; MALTODEXTRIN; MALTODEXTRIN GELS; POTATO STARCH; POTATO STARCH GELS; STARCHES SPECIFIC

L2 ANSWER 18 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1977(12):A0808 FSTA
TI [Microbial production of polysaccharide. II. Production of viscous polysaccharide from ethylene glycol. Sugar components and property of polysaccharide.]
AU Yamaguchi, M.; Sato, A.
SO Report of the Fermentation Research Institute [Kogyo Gijutsu-In Hakko Kenkyusho Kenkyu Hokoku], (1977), No. 49, 103-114, 7 ref.
DT Journal
LA Japanese
SL English
AB The polysaccharide, produced from ethylene glycol by Alcaligenes faecalis I-11-12, was a mixture of an acidic polysaccharide as a major product and a neutral polysaccharide as a minor product. The acidic polysaccharide was composed of D-glucuronic acid, D-glucose, D-galactose and L-fucose approx. in the molar ratio 3:3:2:5. These sugar components were identified as their crystalline derivatives. Sodium and **calcium** salts of the acidic polysaccharide dissolved readily in water and gave a highly viscous solution. A 0.3% acidic polysaccharide solution (pH 7.0) had a **viscosity** of 155 cP at 25°C, which was higher than that given by known polysaccharides such as guar gum, locust bean gum and sodium **alginate.** The **viscosity** was stable within the range pH 6-10 and at temperature below 60°C and was increased by addition of sugars such as sucrose and lactose. [See preceding abstract for part I, and following abstract for part III.]
CC A (Food Sciences)
CT BACTERIA; MICROORGANISMS; POLYSACCHARIDES; **VISCOSITY**; ACHROMOBACTERACEAE; ALCALIGENES; ALCALIGENES FAECALIS POLYSACCHARIDES; FAECALIS; MICROBIAL

L2 ANSWER 19 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1977(04):T0215 FSTA
TI Rheological properties of pectate gels.
AU Mitchell, J. R.; Blanshard, J. M. V.
CS Dep. of Applied Biochem. & Nutr., School of Agric., Univ. of Nottingham, Loughborough, LE12 5RD, UK
SO Journal of Texture Studies, (1976), 7 (3) 341-351, 14 ref.
DT Journal
LA English
AB Creep compliance measurements were made on **calcium** pectate gels using a parallel plate viscoelastometer. Linear viscoelastic behaviour was observed and the response was consistent with a model containing a Maxwell element in series with 3 Voigt elements. When gels were prepared with the Ca level necessary for maximum gel strength a linear relationship was found between the reciprocal of the creep compliance and the square of the polysaccharide concentration The rheological behaviour of pectate gels had many similarities to gels prepared from alginates containing a high proportion of guluronic acid residues. However, pectate gels were more sensitive to Ca ions than **alginate** gels and at high Ca levels the Newtonian **viscosity** of the pectate gel was much higher than that found for the alginates. These differences have been interpreted in terms of the structure and mol. weight of the 2 polymers.
CC T (Additives, Spices and Condiments)

CT **CALCIUM**; GELS; PECTIC SUBSTANCES; RHEOLOGICAL PROPERTIES; CA; PECTATE; PECTATE GELS; RHEOLOGICAL

L2 ANSWER 20 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1973(12):G0573 FSTA
TI [Obtaining **calcium alginate** jelly.]
AU Izyumov, D. B.; Tolstoguzov, V. B.; Chimirov, Yu. I.
CS Moskovskii Inst. Narodnogo Khozyaistva im. G. V. Plekhanova, USSR
SO Izvestiya Vysshikh Uchebnykh Zavedenii, Pishchevaya Tekhnologiya, (1973), No. 1, 40-42, 5 ref.
DT Journal
LA Russian
AB Processes of forming **calcium alginate** jellies by adding sodium **alginate** solution to **calcium** chloride solution, or a disperison of **calcium** salts with a highly positive dissolving coefficient in water can be studied by viscometric titration. The maximum specific **viscosity** of the system sodium **alginate-calcium** salts-water provides the criterion for formation of the space lattice of the jelly under experimental conditions and permits evaluation of the amount of Ca in the system necessary to form a jelly. At a sodium **alginate** concentration of 0.5-4%, the **viscosity** maximum corresponded to a ratio of Ca ions to the amount of monomer **alginate** units of 0.25-0.30.
CC G (Catering, Speciality and Multicomponent Foods)
CT ALGINATES; **CALCIUM**; DESSERTS; JAMS; **ALGINATE**; **CALCIUM ALGINATE JELLY**; JELLY

L2 ANSWER 21 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1972(03):T0136 FSTA
TI Application and control of the algin-**calcium** reaction.
AU Andrew, T. R.; MacLeod, W. C.
CS Kelco Co., Chicago, Illinois, USA
SO Food Product Development, (1971), 4 (5) 99, 102 & 104
DT Journal
LA English
AB Algin technology can be used to gel products, to produce artificial foods, to improve canned products and to achieve canning of formerly impossible items. The recent applications of algin are based on its reaction with polyvalent metal ions to form gels or high **viscosity** solutions. Ca is the commonest metal used with algin in food applications and forms ionic cross links with **alginate** molecules which can be controlled to achieve the desired end product by heat, which keeps the molecules moving and inhibits algin-**calcium** bond formation; heating above 160°F also renders some Ca salts less soluble. Sequestrants can also be added to slow the reaction and give a softer gel. Water soluble sodium **alginate** is added to the product and to obtain a gel Ca is added at a suitable point before precipitation is required. The release of Ca can be controlled by a sequestrant such as tetrasodium pyrophosphate or sodium hexametaphosphate, or in the case of a custard to be made with hot milk the heat controls the Ca reaction. Applications of the algin-**calcium** gel reaction are given.
CC T (Additives, Spices and Condiments)
CT ADDITIVES; ALGINATES; **CALCIUM**; CANNED FOODS; CANNING; DAIRY PRODUCTS; DESSERTS; FIRMNESS; GELATION; GELS; HEATING; MILK; PHOSPHATES; POLYSACCHARIDES; RHEOLOGICAL PROPERTIES; SODIUM; STABILITY; THERMOPHYSICAL PROPERTIES; THICKENERS; **VISCOSITY**; ALGIN; ALGIN-CA REACTION; **ALGINATE GELS**; ALGINIC ACID; CA; CANNED; CHELATING AGENTS; CUSTARDS; FOODS; HEAT TRANSFER; MILK (PROCESSING); MILK PRODUCTS; PRODUCTS; RIGIDITY; SESQUESTRANTS; SODIUM PHOSPHATES; CUSTARDS ; GELS ; HEATING ; SODIUM PHOSPHATES ; STABILITY ; **VISCOSITY**

L2 ANSWER 22 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1971(10):S1208 FSTA
TI [Sausage manufacturing process.]
IN Shalunova, G. I.; Baranov, V. S.; Trofimova, V. I.; Brunnek, N. I.

SO USSR Patent, (1970)
PI SU 282915
DT Patent
LA Russian
AB The raw material is comminuted and mixed with additives, e.g. sodium **alginate**, **calcium** gluconate, dried milk, cooking salt and spices, then stirred and filled into a cellulose skin. If fish protein paste is used as the raw material, the sausage mass, after being filled into the skin, is kept for a while in a 1% citric acid solution to produce a resilient and compact consistency.
CC S (Meat, Poultry and Game)
CT **CALCIUM**; CITRIC ACID; CONSISTENCY; COOKING; FISH; FISH PRODUCTS; MILK; ORGANIC ACIDS; PASTES; POLYSACCHARIDES; SALT; SAUSAGES; SODIUM; SPICES; THICKENERS; **VISCOSITY**; **ALGINATE**; ALGINIC ACID; **CALCIUM GLUCONATE**; DRIED MILK; FISH SAUSAGES; GLUCONATE; GLUCONIC ACID; IMPROVE; NACL; PASTE; PRODUCT; PROTEIN; PROTEINS (ANIMAL); SAUSAGE; **SODIUM ALGINATE**; SODIUM CHLORIDE

L2 ANSWER 23 OF 23 FSTA COPYRIGHT 2004 IFIS on STN
AN 1971(09):R0399 FSTA
TI [Sausage making process.]
IN Shalunova, G. I.; Baranov, V. S.; Trofimova, V. I.; Brunnek, N. I.
SO USSR Patent, (1970)
PI SU 284589
DT Patent
LA Russian
AB The raw material, comprising a krill paste, is mixed with additives, e.g. sodium **alginate**, dried milk, cooking salt, and spices, after which the mass is thoroughly mixed and filled into a cellulose skin. The sausage is then kept in a 0.5% CaCl.sub.2 solution for 8 h at 10°C or 15 h at 3°C to produce a firm and resilient consistency.
CC R (Fish and Marine Products)
CT **CALCIUM**; CHLORIDES; CONSISTENCY; COOKING; CRUSTACEA; MILK; POLYSACCHARIDES; SALT; SAUSAGES; SODIUM; SPICES; THICKENERS; **VISCOSITY**; ALGINIC ACID; CACL2; **CALCIUM CHLORIDE**; DRIED MILK; IMPROVE; KRILL; NACL; SAUSAGE; **SODIUM ALGINATE**; SODIUM CHLORIDE

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Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files
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     FILE 'FSTA' ENTERED AT 12:44:22 ON 10 MAY 2004
L1          2166 S ALGINATE OR LOW(W)METHOXY(W)PECTIN
L2            23 S L1 AND CALCIUM AND VISCOSITY

=> s l1 and viscosity
         13151 VISCOSITY
L3         215 L1 AND VISCOSITY

=> s l2 and pH
         57560 PH
L4             5 L2 AND PH

=> d l4 all 1-5
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L4 ANSWER 1 OF 5 FSTA COPYRIGHT 2004 IFIS on STN
AN 2003:H2618 FSTA
TI Soft drink replacer.
IN Hennepe, F. G. J. te; Lange, M. E. H. de; Laere, K. M. J. van; Navarro y Koren, P. A.
PA NV Nutricia; Nutricia, Zoetermeer, Netherlands
SO United States Patent Application Publication, (2003)
PI US 2003134027 A1
PRAI US @@@@-22372 20011220
DT Patent
LA English
AB A soft drink replacer for treating overweight individuals or preventing the condition is described, which has a **pH** >5, **viscosity** <50 mPas at a shear rate of 100 s.sup.-.sup.1 and **viscosity** of ≥125% of the above value at pH3 and 37°C. Caloric density is 0-500 kcal/l. The beverage contains 0.01-5 weight% of pectin and/or **alginate**, and 0.01-3 weight% Ca.
CC H (Alcoholic and Non-Alcoholic Beverages)
CT ALGINATES; BEVERAGES; **CALCIUM**; DIETETIC FOODS; PATENTS; PECTIC SUBSTANCES; CA

L4 ANSWER 2 OF 5 FSTA COPYRIGHT 2004 IFIS on STN
AN 1996(02):S0058 FSTA
TI High mannuronate alginates as binders in restructured beef.
AU Nielsen, H. T.; Hoegh, L.; Moller, A. J.
CS Dep. of Dairy & Food Sci., Royal Vet. & Agric. Univ., DK-1958 Frederiksberg C, Denmark
SO Journal of Muscle Foods, (1995), 6 (3) 271-282, 14 ref.
ISSN: 1046-0756
DT Journal
LA English
AB Three high mannuronate **alginate** types (Sobalg Fd 155, 176, and 275) were evaluated as binders in finely ground restructured beef (semitendinosus). Formulations with **alginate** levels 0.50-1.25% and **calcium** carbonate levels 0.10-0.25% were prepared, including the acidulant glucono-δ-lactone (0.80%). In addition, Sobalg Fd 176 was evaluated in a coarsely ground restructured product using the same raw materials and ingredient levels. Among **alginate** types, the relatively high **viscosity** graded **alginate**, Sobalg Fd 176, resulted in the highest raw breaking strengths and lowest cooking loss ($P < 0.05$). When averaged across **alginate** types, increased raw breaking strengths were observed when the level of **alginate** was evaluated, providing the **calcium** carbonate level was ≥0.15%. In the coarsely ground product using Sobalg Fd 176, cooked tensile strength ranged from 11.6 N to 17.9 N, corresponding to a satisfactory bind. In both finely and coarsely ground restructured samples, cooking loss was reduced when **alginate** levels were elevated, and **pH** increased as a function of **calcium** carbonate level ($P < 0.05$). This study demonstrates that high mannuronate alginates, especially Sobalg Fd 176, can be used as binders in restructured beef products.
CC S (Meat, Poultry and Game)
CT ADDITIVES; ALGINATES; BEEF; MEAT SPECIFIC; SALTS; STABILIZERS; THICKNESS; BINDING AGENTS

L4 ANSWER 3 OF 5 FSTA COPYRIGHT 2004 IFIS on STN
AN 1990(12):T0022 FSTA
TI Effect of formaldehyde pre-treatment on the intrinsic **viscosity** of **alginate** from various brown seaweeds.
AU Wedlock, D. J.; Fasihuddin, B. A.
CS Shell Res. Ltd., Sittingbourne Res. Cent., Sittingbourne ME9 8AG, UK
SO Food Hydrocolloids, (1990), 4 (1) 41-47, 9 ref.
ISSN: 0268-005X
DT Journal
LA English

AB Sodium **alginate** samples were extracted from brown seaweeds by various methods and the effect of extraction procedure on the intrinsic **viscosity** and, by implication, the mol. weight were studied. Pre-treating the weeds with formaldehyde and ethanol prior to extraction with sodium carbonate or extracting the weeds under neutral conditions with selected **calcium** ion sequestrants resulted in alginates with enhanced intrinsic viscosities. The intrinsic **viscosity** of **alginate** samples during extraction decreased significantly with increasing **pH** due to the presence of phenolic compounds. By isolating phenolic compounds with formaldehyde or extracting them with ethanol, degradation processes can be inhibited.
CC T (Additives, Spices and Condiments)
CT ALDEHYDES; ALGINATES; FORMALDEHYDE; RHEOLOGICAL PROPERTIES; SEAWEEDS; STABILIZERS; **VISCOSITY**

L4 ANSWER 4 OF 5 FSTA COPYRIGHT 2004 IFIS on STN
AN 1986(12):T0036 FSTA
TI Interactions of selected gums in solution and the effects of **pH** and common food ingredients on these interactions.
AU Kaletunic Gencer, G.
CS Univ. of Massachusetts, Amherst, Massachusetts 01002, USA
SO Dissertation Abstracts International, B, (1985), 46 (6) 1759: Order no. DA8517116, 160pp.
DT Journal
LA English
AB Interactions between components in the following gum mixtures: (i) carrageenan-guar gum, (ii) sodium carboxymethylcellulose-locust bean gum, (iii) sodium carboxymethylcellulose-locust bean gum, (iii) sodium carboxymethylcellulose-**alginate**, and (iv) gelatin-**alginate** were evaluated by rheological measurements in the concentration range 0.05-1%. Further studies examined the effect of **pH** (3-9), NaCl (0.1-1.0%), sucrose (10-40%), soy isolate (1-2.5%) and sodium and **calcium** caseinate (1-10%) on the **viscosity** of (i) and (ii). Results included the following. Synergism was shown in (i) and (ii), most notably at a mixing ratio of 1:1, whole (iii) displayed antagonism and (iv) exhibited synergism or antagonism depending on the mixing ratio. **pH** had no effect on apparent **viscosity** of (i), while (ii) showed highest **viscosity** near **pH** 6. Sucrose did not affect **viscosity** of (i) or (ii). NaCl did not affect **viscosity** of (i), but decreased that of (ii) up to NaCl concentration of 0.4%. All the proteins tested influenced the rheological behaviour of (i), but had no effect on (ii).
CC T (Additives, Spices and Condiments)
CT ADDITIVES; GUMS; PROTEIN PRODUCTS; PROTEINS; **VISCOSITY**; COMPONENTS INTERACTION; GUM MIXTURES

L4 ANSWER 5 OF 5 FSTA COPYRIGHT 2004 IFIS on STN
AN 1977(12):A0808 FSTA
TI [Microbial production of polysaccharide. II. Production of viscous polysaccharide from ethylene glycol. Sugar components and property of polysaccharide.]
AU Yamaguchi, M.; Sato, A.
SO Report of the Fermentation Research Institute [Kogyo Gijutsu-In Hakko Kenkyusho Kenkyu Hokoku], (1977), No. 49, 103-114, 7 ref.
DT Journal
LA Japanese
SL English
AB The polysaccharide, produced from ethylene glycol by Alcaligenes faecalis I-11-12, was a mixture of an acidic polysaccharide as a major product and a neutral polysaccharide as a minor product. The acidic polysaccharide was composed of D-glucuronic acid, D-glucose, D-galactose and L-fucose approx. in the molar ratio 3:3:2:5. These sugar components were identified as their crystalline derivatives. Sodium and **calcium** salts of the acidic polysaccharide dissolved readily in water and gave a highly viscous solution. A 0.3% acidic polysaccharide solution (**pH** 7.0) had a

viscosity of 155 cP at 25°C, which was higher than that given by known polysaccharides such as guar gum, locust bean gum and sodium **alginate**. The **viscosity** was stable within the range **pH** 6-10 and at temperature below 60°C and was increased by addition of sugars such as sucrose and lactose. [See preceding abstract for part I, and following abstract for part III.]
CC A (Food Sciences)
CT BACTERIA; MICROORGANISMS; POLYSACCHARIDES; **VISCOSITY**; ACHROMOBACTERACEAE; ALCALIGENES; ALCALIGENES FAECALIS POLYSACCHARIDES; FAECALIS; MICROBIAL

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FILE 'FSTA' ENTERED AT 12:44:22 ON 10 MAY 2004
L1 2166 S ALGINATE OR LOW(W)METHOXY(W)PECTIN
L2 23 S L1 AND CALCIUM AND VISCOSITY
L3 215 S L1 AND VISCOSITY
L4 5 S L2 AND PH

=> s l1 and calcium
9396 CALCIUM
L5 644 L1 AND CALCIUM

=> s l5 and obesity
759 OBESITY
L6 0 L5 AND OBESITY

=> s l1 and obesity
759 OBESITY
L7 2 L1 AND OBESITY

=> d l7 all 1-2

L7 ANSWER 1 OF 2 FSTA COPYRIGHT 2004 IFIS on STN
AN 2004:G0130 FSTA
TI Matrix-forming composition containing pectin.
IN Koren, P. A. N. Y.; Laere, K. M. J. van; Lange, M. E. H. de; Minor, M.
PA N. V. Nutricia; N. V. Nutricia, Zoetermeer, Netherlands
SO United States Patent Application Publication, (2003)
PI US 2003198726 A1
PRAI US @@@@-22372 20011220
DT Patent
LA English
AB An edible liquid composition is described with the following properties: pH >6; viscosity <50 mPas; a shear rate of 100/s and 20°C; and a viscosity of at least 125% of the above value at pH <5 and 37°C. The composition comprises: at least 0.05 weight% pectin with a degree of methoxylation of 2-50 and/or of **alginate**; ≥5 mg Ca/100 ml; and 1-25 g protein/100 ml. The edible liquid composition is suitable for the treatment or prevention of overweight or **obesity** in mammals by enteral administration.
CC G (Catering, Speciality and Multicomponent Foods)
CT DISEASES; FUNCTIONAL FOODS; NOVEL FOODS; PATENTS; PECTIC SUBSTANCES; MEDICAL FOODS; **OBESITY**; PECTINS

L7 ANSWER 2 OF 2 FSTA COPYRIGHT 2004 IFIS on STN
AN 2003:G0707 FSTA
TI Matrix-forming composition containing pectin.
IN Koren, P. A. N. Y.; Laere, K. M. J. van; Lange, M. E. H. De; Minor, M.
PA Koren, Ede, Netherlands
SO United States Patent Application Publication, (2003)
PI US 2003118712 A1

PRAI US @@@@-22372 20011220
DT Patent
LA English
AB A liquid edible composition for the prevention of overweight and **obesity** is described that has: pH >6.0; viscosity <600 mPa at a shear rate of 100/s and 20°C; and a viscosity of ≥125% of the above value at a pH <5.0 and a temperature of 37°C. It contains: ≥0.05 weight% pectin with a degree of methoxylation of 2-50 and/or **alginate**; ≥5 mg Ca/100 ml; and ≥0.1 weight% indigestible oligosaccharide, with a degree of polymerization of 2-60.
CC G (Catering, Speciality and Multicomponent Foods)
CT DISEASES; FUNCTIONAL FOODS; NOVEL FOODS; PATENTS; PECTIC SUBSTANCES; MEDICAL FOODS; **OBESITY**; PECTINS

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6559 WEIGHT
3506 GAIN
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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s alginate or low(w)methoxy(w)pectin
18996 ALGINATE
2150134 LOW
129711 METHOXY
19697 PECTIN
118 LOW(W)METHOXY(W)PECTIN
L9 19082 ALGINATE OR LOW(W)METHOXY(W)PECTIN

=> s l9 and calcium and viscosity
682199 CALCIUM
320344 VISCOSITY
L10 268 L9 AND CALCIUM AND VISCOSITY

=> s l10 and pH
1184560 PH
L11 53 L10 AND PH

=> d l11 cbib,ab 1-53

L11 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2004:347982 Method for the preparation of macrocapsules by drop-process pelletizing. Viladot, Petit Josef-Lluis; Wollmann, Gerhard; Mueller, Ralf (Cognis Deutschland GmbH & Co. KG, Germany; Cognis Iberia, S.L.). Eur. Pat. Appl. EP 1413298 A1 20040428, 22 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (German). CODEN: EPXXDW. APPLICATION: EP 2002-21148 20020924.
AB The invention concerns macrocapsules composed of an active substance and a coating; the microcapsules are prepared by (a1) pressing a preparation of the active substance and a polyanionic compound through nozzles using an oscillating membrane; (a2) collecting the droplets in a precipitation bath containing polycationic compds.; or (b1) pressing a preparation of the active substance and a polycationic compound through nozzles using an oscillating membrane; (b2) collecting the droplets in a precipitation bath containing polyanionic compds. Macrocapsules for pharmaceuticals, cosmetics, food and feed additives, and textile treatment are prepared Expts. were carried out in Mini-Droppo drop-process pelletizing apparatus; an aqueous blue solution containing (weight/weight%) glycerin 5; sodium **alginate** 0.5; blue pigment 0.5; **pH** 5.4 was nebulized into a 1% **calcium** chloride solution

L11 ANSWER 2 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2004:162582 Document No. 140:187436 Extended release matrix tablets. Jain, Girish Kumar; Anand, Om; Rampal, Ashok (Ranbaxy Laboratories Limited, India). PCT Int. Appl. WO 2004016249 A1 20040226, 25 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-IB3269 20030812. PRIORITY: IN 2002-DE839 20020814.
AB The present invention relates to extended-release matrix tablets for oral administration that include a cationic polymer, a water-swellable polymer, and an alginic acid derivative to cause the release rate of the active ingredient of the tablets to be independent of **pH** and gastric residence time. The active ingredient may be one or more of antibiotics, sympathomimetics, sympatholytic agents, cholinergic agents, antimuscarinics, gastrointestinal drugs, genitourinary smooth muscle relaxants, cardiac drugs, anticonvulsants, tranquilizers and sedatives, and in particular may be an antibiotic, such as cefaclor, or may be a sympatholytic agent, such as carvedilol. Thus, tablets contained cefaclor 540.9, lactose 18.1, HPMC (medium **viscosity**) 11, HPC 25, HPMC (low **viscosity**) 152, sodium **alginate** 35, Eudragit EPO 5, Mg stearate 6.5, talc 4.0, and silica 2.5 mg/tablet.

L11 ANSWER 3 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2004:153680 Effect of polymeric cosolutes on **calcium** pectinate gelation. Part 1. Galactomannans in comparison with partially depolymerised starches. Giannouli, P.; Richardson, R. K.; Morris, E. R. (Department of Food and Nutritional Sciences, University College Cork, Cork, Ire.). Carbohydrate Polymers, 55(4), 343-355 (English) 2004. CODEN: CAPOD8. ISSN: 0144-8617. Publisher: Elsevier Science B.V..
AB The effect of galactomannans on gelation of **low methoxy pectin** (DE 31; 2.0 wt%; **pH**.apprxeq.2.9-3.0) on cooling from 90 to 5 °C in the presence of stoichiometric Ca2+ has been characterised by low amplitude oscillatory measurements of G' and G'' for

five samples of guar gum of different mol. wts. and for a single sample of locust bean gum (LBG). All samples caused an increase in G' and G'' in the solution state at 90 °C and a reduction in final moduli at 5 °C, with cooling curves crossing those for **calcium** pectinate alone at .apprx.55 °C. The increase in moduli at high temperature is attributed to segregative interactions promoting formation of **calcium**-mediated egg-box' junctions between pectin chains. The loss of gel strength at low temperature is attributed to excessive association of pectin into large aggregated bundles, again driven by segregative interactions with the galactomannan. Both effects increased in magnitude with increasing concentration of galactomannan. At fixed concentration, the effectiveness of the galactomannan samples in promoting self-association of pectin was found to be inversely proportional to their hydrodynamic volume, as characterised by intrinsic **viscosity** (i.e. with the smallest mols. having the greatest effect). The changes in moduli caused by LBG were closely similar to those observed for guar gum of comparable mol. weight The effect of galactomannans of high mol. weight was similar in magnitude to that of oxidised starch and substantially greater than that of potato maltodextrin, whose interactions with **calcium** pectinate have been studied in detail in previous published investigations.

L11 ANSWER 4 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2003:874783 Document No. 139:354539 Malleable putty and flowable paste with allograft bone having residual **calcium** for filling bone defects. Gertzman, Arthur A.; Sunwoo, Moon H. (USA). U.S. Pat. Appl. Publ. US 2003206937 A1 20031106, 16 pp., Cont.-in-part of U.S. 6,437,018. (English). CODEN: USXXCO. APPLICATION: US 2001-983526 20011024. PRIORITY: US 1998-31750 19980227; US 1999-365880 19990803; US 2000-515656 20000229.

AB The invention is directed toward a malleable bone putty and a flowable pastel composition for application to a bone defect site to promote new bone growth at the site which comprises a new bone growth inducing compound of partially demineralized lyophilized allograft bone material having a residual **calcium** content of 4-8% dry weight The bone powder has a particle size of 100-800 μ and is mixed in a high mol. weight hydrogel carrier containing a sodium phosphate saline buffer, the hydrogel component of the carrier at 1.00-50% of the composition and having a mol. weight of about at least 700,000 Daltons. The composition has a **pH** of 6.8-7.4 contains 25-35% bone powder and can be addnl. provided with BMP's. A malleable putty of 4% hyaluronic acid was prepared by mixing freeze dried demineralized cortical allograft bone of particle size of 100-800 μ with 146.6 g of a 4% solution of hyaluronic acid (mol. wt, 700,000 Daltons) in phosphate buffered saline. The bone component was added to achieve a bone concentration of approx. 32%. The solution was well mixed and allowed to stand for 2-3 h at room temperature This provides a malleable putty with a penetration unit of 66 and excellent formability properties and a **pH** of 7.0.

L11 ANSWER 5 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2003:721185 Document No. 140:41053 Associative and segregative interactions between gelatin and **low-methoxy pectin**: Part 2. Co-gelation in the presence of Ca2+. Gilsenan, P. M.; Richardson, R. K.; Morris, E. R. (Cranfield University at Silsoe, Bedford, Silsoe, MK45 4DT, UK). Food Hydrocolloids, 17(6), 739-749 (English) 2003. CODEN: FOHYES. ISSN: 0268-005X. Publisher: Elsevier Science B.V..

AB The effect of segregative interactions with gelatin (type B; pI=4.9; 0-10%) on the networks formed by **low-methoxy pectin** on cooling in the presence of stoichiometric Ca2+ at **pH** 3.9 has been investigated by rheol. measurements under low-amplitude oscillatory shear. Samples were prepared and loaded at 85°, cooled (1°/min) to 5°, held for 100 min, and re-heated (1°/min) to 85°, with measurement of storage and loss moduli (G' and G'') at 10 rad s-1 and 2% strain. The final values of

G' at 5° for mixts. prepared at the same **pH** without Ca2+ were virtually identical to those observed for the same concns. (0.5-10.0%) of gelatin alone, consistent with the conclusion from the preceding paper that electrostatic (associative) interactions between the two polymers become significant only at **pH** values below 3.9. Increases in moduli on cooling in the presence of Ca2+ occurred in two discrete steps, the first coincident with gelation of **calcium** pectinate alone and the second with gelation of gelatin. Both processes were fully reversible on heating, but displaced to higher temperature (by .apprx.10°), as was also observed for the individual components. The magnitude of the changes occurring over the temperature range of the gelatin sol-gel and gel-sol transitions demonstrates that the gelatin component forms a continuous network; survival of gel structure after completion of gelatin melting shows that the **calcium** pectinate network is also continuous (i.e. that the co-gel is bicontinuous). On progressive incorporation of NaCl (to induce phase separation before, or during, pectin gelation) the second melting process, coincident with loss of **calcium** pectinate gel structure, was progressively abolished, indicating conversion to a gelatin-continuous network with dispersed particles of **calcium** pectinate. These qual. conclusions are supported by quant. analyses reported in the following paper.

L11 ANSWER 6 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2003:556095 Document No. 140:40913 Continuous Production of Cephalosporin-C by Immobilized Microbial Cells Using Symbiotic Mode in a Packed Bed Bioreactor. Kundu, Subir; Mahapatra, Amulya Chandra; Nigam, Vinod Kumar; Kundu, Kanika (Institute of Technology, School of Biochemical Engineering, Banaras Hindu University, Varanasi, India). Artificial Cells, Blood Substitutes, and Biotechnology, 31(3), 313-327 (English) 2003. CODEN: ACBSDA. Publisher: Marcel Dekker, Inc..

AB Cephalosporins are usually produced semisynthetically from Cephalosporin-C, which is exclusively produced by Cephalosporium acremonium. Free cell studies for the production of Cephalosporin-C had some limitation such as pulpy growth of fungus causing an appreciable rise in the broth **viscosity** affecting the transfer of oxygen and other nutrients into the cells. High cell concns. cannot be maintained because of wash out phenomenon at high dilution rates. The whole cell immobilization technique is a potentially important process for Cephalosporin-C biosynthesis, where increase cell densities were maintained and broth-handling problems were reduced. Cephalosporin-C fermentation is a highly aerobic process. The symbiotic relationship of Cephalosporium acremonium and Chlorella pyrenoidosa has been used to increase oxygen transfer rate to the fungi by co-immobilizing it with algae. Co immobilization of whole cells of fungus and algae were carried out in different immobilizing agents and the systems were coated with polyacrylamide resin of pharmaceutical grade to overcome the problems of leakage. The operational stability of immobilized systems in a packed bed reactor was also studied.

L11 ANSWER 7 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2003:551014 Document No. 139:100272 Soft drink replacer for treatment and prevention of overweight. Te Hennepe, Frederik Gerhard Johan; De Lange, Maria Elisabeth Hermien; Van Laere, Katrien Maria Jozefa; Navarro y Koren, Peter Antonio (N.V. Nutricia, Neth.). U.S. Pat. Appl. Publ. US 2003134027 A1 20030717, 13 pp., Cont.-in-part of U.S. Ser. No. 22,372. (English). CODEN: USXXCO. APPLICATION: US 2002-279968 20021025. PRIORITY: US 2001-22372 20011220.

AB The present invention relates to a method for the treatment and/or prevention of overweight in a monogastric mammal. The method comprises administering to the mammal a liquid edible composition with a **pH** of more than 5, a **viscosity** below 50 mPas at a shear rate of 100 s-1 and 20°., and a **viscosity** of at least 125% of the aforementioned **viscosity** at a **pH** 3 and a temperature of 37°.; and with a caloric d. between 0 and 500 kcal per L, the composition comprising: c. between 0.01 and 5 weight % of one or more polysaccharides selected from the group consisting of pectin and

alginate; and between 0.01 and 3 weight % **calcium.** Thus, an appetite reducing drink contains water 320.1 mL, pectin 4.44, CaCO3 0.08, Na-saccharine 0.02, Na-cyclamate 0.2, sucralose 0.02, carrageenan 0.016, peach-orange flavor 0.44, soy masking 0.39, and yellow coloring agent 0.005g.

L11 ANSWER 8 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:533855 Document No. 139:216070 Synthesis and applied properties of carboxymethyl cornstarch. Zhang, Xiaodong; Xin, Liu; Li, Wenying (Department of Chemical Engineering, Qingdao University, 266071, Peop. Rep. China). Journal of Applied Polymer Science, 89(11), 3016-3020 (English) 2003. CODEN: JAPNAB. ISSN: 0021-8995. Publisher: John Wiley & Sons, Inc..
AB In this article, carboxymethyl starch (CMS) with a high degree of substitution (0.91) and high **viscosity** was synthesized by using optimized conditions, and its structure and surface morphol. were analyzed by IR spectroscopy and SEM. This CMS exhibited excellent textile printing behavior. CMS could substitute for 60% sodium **alginate** when it was used as a thickening agent in printing pastes for reactive dyes.

L11 ANSWER 9 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:511055 Document No. 139:68339 Antiobesity soft drink replacer contg. polysaccharides and **calcium.** Te Hennepe, Frederik Gerhard Johan; De Lange, Maria Elisabeth Hermien; Van Laere, Katrien Maria Jozefa; Navarro y Koren, Peter Antonio (N.V. Nutricia, Neth.). PCT Int. Appl. WO 2003053169 A1 20030703, 35 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-NL857 20021220. PRIORITY: US 2001-22372 20011220; EP 2002-77222 20020607; EP 2002-79289 20021016; US 2002-279968 20021025.
AB The present invention relates to a method for the treatment and/or prevention of overweight in a monogastric mammal. More particularly, the invention is concerned with such a method comprising administering to the mammal a liquid edible composition with a **pH** of more than 5, a **viscosity** below 50 mPa at a shear rate of 100s-1 and 20°C, and a **viscosity** of at least 125% of the aforementioned **viscosity** at a **pH** 3 and a temperature of 37°C; and with a caloric d. between 0 and 500 kcal/L, the composition comprising: a. between 0.01 and 5 weight% of one or more polysaccharides selected from the group consisting of pectin and **alginate**; and b. between 0.01 and 3 weight% **calcium.**

L11 ANSWER 10 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:511053 Document No. 139:68503 antiobesity and antidiabetic matrix-forming composition containing pectin. Navarro y Koren, Peter Antonio; Van Laere, Katrien Maria Jozefa; De Lange, Maria Elisabeth Hermien; Minor, Marcel (N.V. Nutricia, Neth.). PCT Int. Appl. WO 2003053165 A1 20030703, 42 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-NL856 20021220. PRIORITY: US 2001-22372 20011220; EP 2002-77222 20020607; EP 2002-79289 20021016; US 2002-279968 20021025.
AB One aspect of the present invention relates to a liquid edible composition with a

pH of more than 6, a **viscosity** below 600 mPa at a shear rate of 100s-1 and 20°C, and a **viscosity** of at least 125 % of the aforementioned **viscosity** at a **pH** below 5 and a temperature of 37°C, the composition comprising at least 0.05 weight% of pectin having a degree of methoxylation between 2 and 50 and/or of **alginate**; at least 5 mg **calcium** per 100 mL; and at least 0.1 weight% indigestible oligosaccharide having a degree of polymerization between 2 and 60. Another aspect of the invention relates to a method for the treatment or prevention of overweight or obesity in mammals, said method comprising the enteral administration to a mammal of an effective amount of the aforementioned composition

L11 ANSWER 11 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:494928 Document No. 140:8607 Formation of **alginate** microspheres produced using emulsification technique. Heng, P. W. S.; Chan, L. W.; Wong, T. W. (Department of Pharmacy, Faculty of Science, National University of Singapore, Singapore, 117543, Singapore). Journal of Microencapsulation, 20(3), 401-413 (English) 2003. CODEN: JOMIEF. ISSN: 0265-2048. Publisher: Taylor & Francis Ltd..
AB This study investigated the formative process of **alginate** microspheres produced using an emulsification technique. The **alginate** microspheres were produced by crosslinking **alginate** globules dispersed in a continuous organic phase using various **calcium** salts: **calcium** chloride, **calcium** acetate, **calcium** lactate and **calcium** gluconate. The size, shape, drug content and Ca2+ content of the microspheres were evaluated. The tack, **viscosity** and **pH** of the **calcium** salt solution and percentage of Ca2+ partitioned into the organic phase were determined Microscopic examination of the test emulsion at various stages of the emulsification process was also carried out. The propensity of crosslinking reaction was found to be dependent on successful collision between **alginate** and **calcium** salt globules. Examination of the characteristics of microspheres indicated that the formed microsphere was a resultant product of **alginate** globule clustering. The growth propensity of microspheres was promoted by the higher rate and extent of cross-linkage which was governed by the **pH**, tack and/or Ca2+ content of the crosslinking solution, as well as the dissociation constant and diffusivity of the **calcium** salt. Overall, the amount of free Ca2+ cross-linked with **alginate** in the formed microspheres was in the following order: **calcium** acetate > **calcium** chloride + **calcium** acetate > **calcium** chloride + **calcium** gluconate; **calcium** chloride + **calcium** lactate > **calcium** chloride. In microencapsulation by emulsification, the mean size of the microspheres produced can be modified by varying the tack, **pH** and Ca2+ content of the crosslinking solution and through the use of a combination of **calcium** salts. The shape of the microspheres produced was, nonetheless, unaffected by the physicochem. properties of the crosslinking solution

L11 ANSWER 12 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:492448 Document No. 139:52093 Matrix-forming antiobesity beverage composition containing pectin. Navarro, Y. Koren Peter Antonio; Van Laere, Katrien Maria Jozefa; De Lange, Maria Elisabeth Hermien; Minor, Marcel (Neth.). U.S. Pat. Appl. Publ. US 2003118712 A1 20030626, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-22372 20011220.
AB One aspect of the present invention relates to a liquid edible composition with a **pH** of more than 6, a **viscosity** below 600 mPas at a shear rate of 100s-1 and 20°C., and a **viscosity** of at least 125% of the aforementioned **viscosity** at a **pH** below 5 and a temperature of 37°C., the composition comprising at least 0.05 weight% of

pectin having a degree of methoxylation between 2 and 50 and/or of **alginate**; at least 5 mg **calcium** per 100 mL; and at least 0.1 weight % indigestible oligosaccharide having a degree of polymerization between 2 and 60. Another aspect of the invention relates to a method for the treatment or prevention of overweight or obesity in mammals, said method comprising the enteral administration to a mammal of an effective amount of the aforementioned composition

L11 ANSWER 13 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:419963 Document No. 139:229626 A polyuronan blend giving novel synergistic effects and bake-stable functionality to high soluble solids fruit fillings. Young, Niall W. G.; Kappel, Grethe; Bladt, Tove (Danisco, Brabrand, 8200, Den.). Food Hydrocolloids, 17(4), 407-418 (English) 2003. CODEN: FOHYES. ISSN: 0268-005X. Publisher: Elsevier Science B.V..
AB The effects of High M **alginate**, LE pectin and a combination, GRINDSTED FB 850 Stabilizer System (FB 850), giving bake-stable functionality in real, high soluble solids (72%) fruit fillings, are studied as a function of **pH**, fruit type, syneresis, and gel strength above the accepted bake-stable index of 80%. For acceptable bake stability, **alginate** showed a broad fruit, and thereby **calcium** tolerance (24.2-34.8 mg Ca/g **Alginate**), and a narrow **pH** range (3.8-4.0); contrary pectin showed a narrower **calcium** tolerance (20.7-29.4 mg Ca/g Pectin) but broader **pH** range (3.4-4.0) and FB 850 showed a **calcium** tolerance similar to pectin, (25.1-33.8 mg Ca/g FB 850) in terms of range, and a **pH** tolerance broader than both **alginate** and pectin (3.3-4.3). In **alginate**, syneresis was absent over the narrow **pH** range (3.8-4.0); pectin showed syneresis at lower **pH** (3.4-3.7), and in FB 850 syneresis was prevented over the entire **pH** range (3.3-4.3). FB 850 required lower gel strengths to achieve bake stability compared to pectin and **alginate.** For FB 850, pectin and **alginate**, thixotropy decreased (80, 48 and 23%, resp.), while the observed increase in elasticity and relative gel strengths, similarly suggested decreasing pumpability over the same given order. Pectin-**alginate** chain-chain assocns. cannot readily explain the synergistic effects seen in FB 850 because of high **pH**, initial presence of **calcium** and the low ester pectin. It can be therefore proposed that the synergy is driven by antagonistic competition between pectin and **alginate** for the **calcium.** The authors describe this as a mixed-independent system.

L11 ANSWER 14 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2003:4508 Document No. 138:105844 Enzymatic clarification of bael juice by **calcium alginate** gel immobilized PME of Aspergillus oryzae. Ghosh, U.; Gangopadhyay, H. (Department of Food Technology & Biochemical Engineering, Jadavpur University, Kolkata, 700 032, India). Indian Journal of Chemical Technology, 9(6), 504-507 (English) 2002. CODEN: ICHTEU. ISSN: 0971-457X. Publisher: National Institute of Science Communication.
AB The production of pectin Me esterase (PME) was investigated on solid substrate fermentation of Aspergillus oryzae. The optimum conditions of PME production were 30°C, incubation for 3 days and hydration of wheat bran 50% (w/v). The partially purified PME was then immobilized by 2% sodium **alginate** by crosslinking with 2% CaCl2 solution, retaining 68% of the activity of free PME. Optimum **pH** for free and immobilized PME was 3.6 and 4.0 resp. Optimum temperature was the same for free and immobilized PME. Michaelis constant for free and immobilized PME was 0.7% and 0.6% resp. The immobilized PME retained about 72% of the initial activity after being used for 10 cycles for the clarification of Bael juice.

L11 ANSWER 15 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2002:642204 Document No. 138:374007 **Alginate**-konjac

glucomannan-chitosan beads as controlled release matrix. Wang, Kang; He, Zhimin (Chemical Engineering Research Center, Enzyme Technology Laboratory, Tianjin University, Tianjin, 300072, Peop. Rep. China). International Journal of Pharmaceutics, 244(1-2), 117-126 (English) 2002. CODEN: IJPHDE. ISSN: 0378-5173. Publisher: Elsevier Science B.V..

AB Controlled release beads were prepared by using **alginate** (ALG), konjac glucomannan (KGM) and chitosan (CHI). Bovine serum albumin and insulin were used as model proteins for in vitro assessments. It was observed that KGM could be contained within beads, and faintness hydrogen binding and electrostatic interaction exist between ALG and KGM by IR spectra. Clear dents were found on the surface of beads using KGM by SEM. Use of KGM could help increase the payload of drug. After beads were treated by 0.1 N HCl for 4 h and put into **pH** 7.4 buffers, protein was released from ALG-CHI beads within 1 h, while it was lost from ALG-KGM-CHI beads for 3 h. However, the leaking of protein from ALG-KGM-CHI beads was also increased in 0.1 N HCl solution Concentration of gelling ion had great effect on release rate and gel structure. Studies of water of hydration had shown that swelling of ALG-KGM-CHI beads was higher than that of ALG-CHI beads in acidic solution, but the opposite result was obtained in alkali solution The result indicated that the diffusion of protein was related to the **viscosity** and swelling properties of KGM.

L11 ANSWER 16 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2002:604196 Document No. 137:326766 Homogeneous **alginate** gels: phase behavior and rheological properties. Shchipunov, Yu. A.; Koneva, E. L.; Postnova, I. V. (Institute of Chemistry, Russian Academy of Sciences, Vladivostok, 690022, Russia). Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B, 44(7), 1201-1211 (Russian) 2002. CODEN: VSSBEE. ISSN: 1023-3091. Publisher: MAIK Nauka/Interperiodica Publishing.

AB **Alginate** gels were prepared by the internal gelation method in reaction system composed of sodium **alginate**, D-glucono-δ-lactone, and an aqueous dispersion of **calcium** carbonate. The hydrolysis of lactone caused a slow acidification of an aqueous solution leading to the decomposition of the inorg. salt used and to the uniform release of **calcium** cations into the whole volume Gels were produced via complex formation between Ca2+ and carboxyl groups of **alginate.** The conditions and kinetics of gel formation and the properties of gels were comprehensively studied. The role of each component of the reaction system and the interrelationship between them were examined The pseudophase diagram characterizing the phase behavior as a function of the concentration of reagents was constructed in the **calcium** carbonate-D-glycono-δ-lactone coordinates taking into account syneresis and differences in the optical and mech. properties of gel systems. The latter were estimated by rheol. measurements carried out under various regimes. The effects of the ratio between the concns. of sodium **alginate**, **calcium** carbonate, and D-glycono-δ-lactone on the optical and mech. properties of **alginate** gels, as well as on their syneresis, were ascertained.

L11 ANSWER 17 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2002:567433 **Alginate** in drug delivery systems. Tonnesen, Hanne Hjorth; Karlsen, Jan (Institute of Pharmacy, University of Oslo, Oslo, 0316, Norway). Drug Development and Industrial Pharmacy, 28(6), 621-630 (English) 2002. CODEN: DDIPD8. ISSN: 0363-9045. Publisher: Marcel Dekker, Inc..

AB Alginates are established among the most versatile biopolymers, used in a wide range of applications. The conventional use of **alginate** as an excipient in drug products generally depends on the thickening, gel-forming, and stabilizing properties. A need for prolonged and better control of drug administration has increased the demand for tailor-made polymers. Hydrocolloids like **alginate** can play a significant role in the design of a controlled-release product. At low **pH**

hydration of alginic acid leads to the formation of a high-**viscosity** "acid gel.". **Alginate** is also easily gelled in the presence of a divalent cation as the **calcium** ion. Dried sodium **alginate** beads reswell, creating a diffusion barrier decreasing the migration of small mols. (e.g., drugs). The ability of **alginate** to form two types of gel dependent on **pH**, i.e., an acid gel and an ionotropic gel, gives the polymer unique properties compared to neutral macromols. The mol. can be tailor-made for a number of applications. So far more than 200 different **alginate** grades and a number of **alginate** salts are manufactured The potential use of the various qualities as pharmaceutical excipients has not been evaluated fully, but **alginate** is likely to make an important contribution in the development of polymeric delivery systems. This natural polymer is adopted by **Ph.**Eur. It can be obtained in an ultrapure form suitable for implants. This review discusses the present use and future possibilities of **alginate** as a tool in drug formulation.

L11 ANSWER 18 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2002:551533 Document No. 137:114518 Skin sanitizing compositions. Sine, Mark Richard; Wei, Karl Shiqing; Jakubovic, David Andrew; Thomas, Cheyne P.; Dodd, Michael Thomas; Putman, Christopher Dean (The Procter & Gamble Company, USA). U.S. US 6423329 B1 20020723, 14 pp., Cont. of U.S. Ser. No. 321,291. (English). CODEN: USXXAM. APPLICATION: US 2000-504286 20000215. PRIORITY: US 1999-249717 19990212; US 1999-PV120098 19990216; US 1999-321291 19990527.

AB The present invention relates to compns. and methods of sanitizing and moisturizing skin surfaces. A sanitizing and moisturizing gel contained EtOH 55, isopropanol 3, Biowax-754 0.4, Carbopol Ultrez-10 0.3,Carbowax PEG-200 0.26, propylene glycol 0.02, aminomethylpropanol 0.15, and perfume 0.1%, and water qs.

L11 ANSWER 19 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2002:76850 Document No. 137:190516 Production of **alginate** beads by emulsification/internal gelation. Poncelet, D. (Ecole Nationale d'Ingenieurs des Techniques des Industries Agricoles et, Nantes, 44322, Fr.). Annals of the New York Academy of Sciences, 944(Bioartificial Organs III), 74-82 (English) 2001. CODEN: ANYAA9. ISSN: 0077-8923. Publisher: New York Academy of Sciences.

AB **Alginate** microspheres were produced by emulsification/internal gelation of an **alginate** sol dispersed within vegetable oil, followed by a reduction in **pH** to release **calcium** from an insol. salt. Microspheres with mean diams. ranging from 50 to 1,000 μm were obtained with standard deviations ranging from 35 to 45% of their mean value. Smooth, spherical beads were obtained with the narrowest size dispersion when using low guluronic and low **viscosity** **alginate** and a carbonate complex as **calcium** vector. The **calcium** salt must also be included within the **alginate** sol as a very fine powder to promote homogeneous gelation. Internal gelation was also tested with the dropping method. Observation of the beads produced revealed that the structure of the beads is more homogeneous than observed with external gelation. Shrinking is more important, although the diffusion of large mols. is faster with internal vs. external gelation.

L11 ANSWER 20 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2002:24952 Document No. 136:261851 Pilot plant scale extraction of alginates from Macrocystis pyrifera 3. precipitation, bleaching and conversion of **calcium alginate** to alginic acid. McHugh, Dennis J.; Hernandez-Carmona, Gustavo; Arvizu-Higuera, Dora Luz; Rodriguez-Montesinos, Y. Elizabeth (School of Chemistry, University of New South Wales, Canberra, ACT 2600, Australia). Journal of Applied Phycology, 13(6), 471-479 (English) 2001. CODEN: JAPPEL. ISSN: 0921-8971. Publisher: Kluwer Academic Publishers.

AB Three steps of the **alginate** production process were studied at pilot plant level. The effect of the amount of **calcium** chloride used

during the precipitation was measured in terms of filtration time of the precipitated **calcium alginate**. Three different proportions of **calcium** chloride per g of **alginate** were tested. The best proportion used was 2.2 parts of **calcium** chloride per one part of **alginate**, yielding a filtration rate of 97.9 L min-1 on a screen area of 1.32 m2. The method of adding the solns. and the degree of mixing are discussed as other factors affecting the precipitation step. The effect of bleaching the **calcium alginate** with sodium hypochlorite (5%) was studied. Seven proportions, ranging from 0 to 0.77 mL of sodium hypochlorite per g of sodium **alginate** were tested. The effect of hypochlorite was compared for alginates with three different viscosities. Using alginates with medium **viscosity** (300-500 mPa s), the best proportion was 0.4 mL hypochlorite per g of **alginate**, yielding an **alginate** of light cream color with 20% less **viscosity** than the control. Alginates with lower **viscosity** showed a smaller loss of **viscosity**. The effect of **pH** during conversion of **calcium alginate** to alginic acid was determined using four combinations of **pH**, ranging from 2.2 to 1.6, in three acid washings. The extent of conversion was determined by measuring the percent reduction of the **alginate viscosity** (RV) in 1% solution before and after adding a sequestrant of **calcium**. When a **pH** 1.8 or 1.6 was used for each washing, only two washings were necessary to produce a RV lower than 40% (maximum recommended). The use of **pH** 2 required three acid washings to produce the same effect. The **pH** 2.2 did not remove enough **calcium**, even with three washings, the RV of the resulting sodium **alginate** being greater that 40%. The results of these expts. provide the information that producers need when deciding the best parameters to obtain a product with the desired characteristics.

L11 ANSWER 21 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2001:816464 Document No. 135:362573 Hemostatic compositions of polyacids and polyalkylene oxides. Cortese, Stephanie M.; Schwartz, Herbert E.; Oppelt, William G. (Fziomed, Inc., USA). PCT Int. Appl. WO 2001082937 A1 20011108, 58 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US13520 20010426. PRIORITY: US 2000-PV200457 20000428; US 2000-PV200637 20000428.

AB The present invention relates to improved methods for making and using hemostatic, bioadhesive, bioresorbable, anti-adhesion compns. made of intermacromol. complexes of carboxyl-containing polysaccharides, polyether, polyacids, polyalkylene oxides, and optionally including multivalent cations and/or polycations and/or hemostatic agents. The polymers can be associated with each other, and are then either dried into membranes or sponges, or are used as fluids, gels, or foams. Hemostatic, bioresorbable, bioadhesive, anti-adhesion compns. are useful in surgery to prevent bleeding and the formation and reformation of post-surgical adhesions. The compns. are designed to breakdown in-vivo, and thus be removed from the body. The hemostatic, anti-adhesion, bioadhesive, bioresorptive, antithrombogenic and/or phys. properties of such compns. can be varied as needed by carefully adjusting the **pH**, solids content cation content of the polymer casting solns., polyacid composition, the polyalkylene oxide composition, or by adding hemostatic agents. Hemostatic membranes, gels and/or foams can be used concurrently. Hemostatic, antiadhesion compns. may also be used to lubricate tissues and/or medical instruments, and/or deliver drugs to the surgical site and release them locally. CMC/PEO membranes, especially the 50/50 CMC/PEO membrane, is highly

anti-thrombogenic, based on the reduction in the number of adherent platelets and
the extent of platelet activation on these surfaces. Thus, increasing the amount of PEO in membranes increases their antithrombogenic properties.

L11 ANSWER 22 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2001:816395 Document No. 135:362559 Polyacid/polyalkylene oxide foams and gels for drug delivery. Miller, Mark E.; Cortese, Stephanie M.; Schwartz, Herbert E.; Oppelt, William G. (Fziomed, Inc., USA). PCT Int. Appl. WO 2001082863 A2 20011108, 57 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US13505 20010426. PRIORITY: US 2000-PV200637 20000428; US 2000-PV200457 20000428.
AB The present invention relates to improved methods for delivering bioadhesive, bioresorbable, anti-adhesion compns. Antiadhesion compns. can be made of intermacromol. complexes of carboxyl-containing polysaccharides, polyethers, polyacids, polyalkylene oxides, multivalent cations and/or polycations. The polymers are associated with each other, and are then used as fluids, gels or foams. By providing a product bag, the compns. can be delivered as gels or as sprays. By dissolving propellant gases in the compns., the materials can be delivered as foams, which have decreased d., and therefore can adhere to surfaces that previously have been difficult to coat with antiadhesion gels. Delivery systems can also provide mechanisms for expelling more product, and for directing the flow of materials leaving the delivery system. Bioresorbable, bioadhesive, anti-adhesion, and/or hemostatic compns. are useful in surgery to prevent the formation and reformation of post-surgical adhesions. The biol. and phys. properties of such compns. can be varied as needed by carefully adjusting the **pH** and/or cation content of the polymer casting solns., polyacid composition, the polyalkylene oxide composition, or by selecting
the solids content of the composition Antiadhesion compns. may also be used to lubricate tissues and/or medical instruments, and/or deliver drugs to the surgical site and release them locally. An antiadhesion composition comprising a gel was loaded into a CCL ABS canister with a liner. The composition comprised 2.2% total solids with a ratio of CMC to PEG of 97.5:2.5, and included sufficient Ca to provide a 60% ionically associated complex. Portions of the composition were sterilized in an autoclave at a temperature of 122° for 35 min.

L11 ANSWER 23 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2001:791848 Document No. 135:322554 Cosmetic lotions rich in sodium, potassium, **calcium**, and magnesium ion and their preparation. Nakajima, Kyoko (Kyodo K. K., Japan; Kowa Shoji K. K.; Meiteia K. K.). Jpn. Kokai Tokkyo Koho JP 2001302430 A2 20011031, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-118957 20000420.
AB The lotions, showing **pH** 10-13 and **viscosity** 10-12 mPa-s, are prepared by preparing water containing Na ion 140-500, K ion 5.0-1800,
Ca ion 5.0-30, and Mg ion 14.0-18 mg/L, adding water-soluble cosmetic components to the H2O, dissolving alc.-soluble cosmetic components into alcs., and mixing the aqueous solns. with the alc. solns. The lotions show horny layer-softening, skin-cleansing, and moisturizing effect. Salty lake water was applied to Amberlite IRA 400 and mixed with Na **alginate**, glycerin, and KOH to give a lotion.

L11 ANSWER 24 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2001:318933 Document No. 135:157655 Wet extrusion of fibronectin-fibrinogen cables for application in tissue engineering. Underwood, S.; Afoke, A.;

Brown, R. A.; MacLeod, A. J.; Shamlou, P. Ayazi; Dunnill, P. (Advanced Centre for Biochemical Engineering, Department of Biochemical Engineering, University College London, London, WC1E 7JE, UK). Biotechnology and Bioengineering, 73(4), 295-305 (English) 2001. CODEN: BIBIAU. ISSN: 0006-3592. Publisher: John Wiley & Sons, Inc..

AB A method for the wet extrusion of human plasma-derived fibronectin-fibrinogen cables is described. Solns. of fibronectin and fibrinogen with and without sodium **alginate** and CM-cellulose (CMC) are tested. The rheol. properties of the protein solns. changed from Newtonian to shear thinning non-Newtonian in the presence of small quantities of these additives, the apparent **viscosity** increased, and the extrusion properties of the protein solns. improved. Cables were prepared using a capillary with a diameter of 1 mm and overall length of 18 mm. Cable diameter was reduced to about 0.5 mm by drawing using a series of rollers. Cables prepared with sodium **alginate** were found to have suitable properties, and those made with CMC were sticky and difficult to handle. Solns. containing no sodium **alginate** required a min. total protein concentration of about 70 mg/mL for extrusion. Extruded cables were prepared with solns. containing 140 mg/mL total protein with 12.9 mg/mL **alginate** (high protein), and 46 mg/mL total protein with 47.6 mg/mL of sodium **alginate** (high **alginate**). The mech. strength of the extruded cables was within the range suitable for application in tissue engineering. Extrusion of the protein solns. into cables was achieved in a coagulation bath. Cables with a mech. strength of approx. 30 N/mm2, suitable for wound repair and nerve regeneration applications, were prepared with a coagulation bath containing 0.25 M HCl, 2% CaCl2 at a **pH** of <0.9. These cables also had a large average elongation at break of 52%, and showed an increase in cable length after breakage (permanent set) of 20%, demonstrating the potential for drawing the cables down to a fine diameter

L11 ANSWER 25 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2001:128394 Document No. 134:179871 Coating materials for sewn products containing adhesives and workability improvers for imparting various functional properties to the sewn products and manufacture of coating materials therefor and coating sewn products with coatings therefrom. Sadanari, Shigeyuki; Kimura, Masanao (Yuken Chemical K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2001049581 A2 20010220, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-222277 19990805.

AB The coatings essentially contain mixts. (A) comprising adhesives, **viscosity** adjustors, workability improvers, and color adjusting agents, or the coating materials comprise (A) mixts. containing softening agents or A mixts. containing dye discharging agents or A mixts. containing color developing agents or A mixts. containing water repellents or A mixts. containing metals or vapor-deposited metal-coated substances or A mixts. containing ceramics. Coated sewn products are prepared by coating sewn products with A mixts. by the roller coating method, spray coating method, or printing method, drying the coating, and hot pressing the coating. Aqueous aliphatic polyester-polyurethane dispersion 40, di-Me polysiloxane 5, monoethylene glycol 5, monoethanolamine 4, alkyl ether-type nonionic surfactant 2, carbolic acid 0.5, waterborne pigment 4, isocyanate crosslinking agent 4, and H2O 39.5 parts were mixed to give a coating composition A jean was coated with the coating composition, dried, and hot pressed to give a jean exhibiting leather-like surface and showing good smoothness and luster.

L11 ANSWER 26 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

2000:192088 Document No. 132:352649 Comparison of the pharmaceutical properties of sustained-release gel beads prepared by **alginate** having different molecular size with commercial sustained-release tablet. Imai, T.; Kawasaki, C.; Nishiyama, T.; Otagiri, M. (Faculty of Pharmaceutical Sciences, Kumamoto University, Kumamoto, Japan). Pharmazie, 55(3), 218-222 (English) 2000. CODEN: PHARAT. ISSN: 0031-7144. Publisher: Govi-Verlag Pharmazeutischer Verlag.

AB Spherical **alginate** gel beads containing pindolol were prepared using three types of sodium **alginate** with different mol. size. The rate of gelation of sodium **alginat** in **calcium** chloride solution was in the range of 1.0 to 1.3 h-1 among the used 3 alginates, but the amount of water squeezed from the **alginate** gel beads during gelation increased from 5 to 40% with increasing mol. size of the **alginate.** The beads prepared were similar in diameter (1.2 mm after drying), weight (0.9 mg/bcad), **calcium** content (27-29 μg/bead) and pindolol content (40-45%). Pindolol was rapidly released from all the **alginate** gel beads at **pH** 1.2 owing to the high solubility of pindolol, in spite of non-swelling of beads. On the other hand, pindolol release from **alginate** gel beads at **pH** 6.8 was dependent on the swelling of the beads and was significantly depressed compared to drug powder. Interestingly, the release rate of pindolol and the swelling rate of beads were markedly slow for beads prepared by low mol. size **alginate.** However, when the **alginate** gel beads were administered orally to beagle dogs, the serum levels of pindolol showed sustained-release profiles, depending on the mol. size of the **alginate.** The in vivo absorption of pindolol from **alginate** gel beads did not reflect their in vitro release profiles, because of a phys. strength of beads in the intestinal tract. Furthermore, the in vivo and in vitro release of pindolol from **alginate** gel beads were compared with a com. sustained-release tablet, Carvisken showed a rapid release of 50% of content in **pH** 1.2 fluid and residual 50% of pindolol were easily dissolved at **pH** 6.8. Although the release characteristics of pindolol from Carvisken and the **alginate** gel beads were completely different, the serum levels of pindolol in human volunteers were comparable.

L11 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
2000:175645 Document No. 132:212539 Tooth erosion inhibitor compositions containing **viscosity** modifying polymers. Baker, Nicola Jane; Parker, David Myatt (SmithKline Beecham P.L.C., UK). PCT Int. Appl. WO 2000013531 A2 20000316, 22 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-EP6423 19990831. PRIORITY: GB 1998-19530 19980909.
AB Disclosed is the use of **viscosity** modifying polymer materials, commonly used as stabilizers, thickeners and emulsifiers, as tooth erosion inhibitors in acidic compns. for oral administration, especially in acidic beverages such as fruit drinks and oral healthcare products such as mouthwashes, in which the effective **pH** of the composition is less than or equal to 4.5. A ready to drink beverage (**pH** = 3.5) containing, citric acid 3.8, acesulfame K 0.74, aspartame 0.72, ascorbic acid 0.29, xanthan gum 0.34 kg, orange juice 110, and orange flavoring 0.4 L. was prepared When tested for its potential to dissovle enamel in the in vitro protocol, the beverage gave an enamel loss of 1 as compared to 16 μm for the control beverage without xanthan gum. Formulation of a mouthwash for inhibition of dental erosion is disclosed.

L11 ANSWER 28 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1999:473106 Document No. 131:256468 A physico-chemical approach to production of **alginate** beads by emulsification-internal ionotropic gelation. Poncelet, D.; Babak, V.; Dulieu, C.; Picot, A. (ENSAIA-INPL, Vandoeuvre, 172-54505, Fr.). Colloids and Surfaces, A: Physicochemical and Engineering Aspects, 155(2-3), 171-176 (English) 1999. CODEN: CPEAEH. ISSN: 0927-7757. Publisher: Elsevier Science B.V..
AB Some physico-chemical parameters influencing production and size of **alginate** beads by emulsification-internal gelation method have been examined: guluronic-acid content and **viscosity** of

alginate samples, grain size and type of insol. **calcium** compds. producing internal gelation, **pH** and gelation time, and the stability of water in oil emulsion. It is demonstrated that the emulsification-internal gelation is promising for large-scale immobilization within **alginate** gels.

L11 ANSWER 29 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1999:434625 Document No. 131:219082 Polymers for sustained release formulations of dipyridamole-**alginate** microspheres and tabletted microspheres. Gursoy, A.; Karakus, D.; Okar, I. (Department of Pharmaceutical Technology, Faculty of Pharmacy, Istanbul, 81010, Turk.). Journal of Microencapsulation, 16(4), 439-452 (English) 1999. CODEN: JOMIEF. ISSN: 0265-2048. Publisher: Taylor & Francis Ltd..
AB The preparation of dipyridamole (DIP)-**alginate** (alg) microspheres by different methods or the incorporation of tragacanth (trgh), pectin or Eudragit L-100 55 (Eud) in alg microsphere formulations did not provide a prolonged release of DIP at **pH** 1.2. Tabletted microsphere formulations containing alg, trgh, pectin, sodium CM-cellulose (CMC), sodium starch glycolate (SSG), carrageenan (carrg) or Eud as diluents in different ratios, produced tablets with good phys. properties which did prolong DIP release. The type, **viscosity** and the ratio of the diluent polymer, microsphere size and the compression pressure were the important factors to produce tablets with desired properties. No advantage of the tablets containing alg microspheres and granulated diluents was observed over the tablets containing powdered diluents.

L11 ANSWER 30 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1999:339044 Document No. 131:143749 Pilot plant scale extraction of **alginate** from Macrocystis pyrifera. 1. Effect of pre-extraction treatments on yield and quality of **alginate.** Hernandez-Carmona, Gustavo; McHugh, Dennis J.; Arvizu-Higuera, Dora L.; Rodriguez-Montesinos, Elizabeth (Centro Interdisciplinario de Ciencias Marinas, La Paz, Mex.). Journal of Applied Phycology, Volume Date 1998, 10(6), 507-513 (English) 1999. CODEN: JAPPEL. ISSN: 0921-8971. Publisher: Kluwer Academic Publishers.
AB In the extraction of **alginate** from brown seaweeds, the acid pre-extraction treatment has been considered by many authors as an essential step because it makes the **alginate** more readily soluble in an alkaline solution At pilot plant level, extns. were made (i) using formalin treatment prior to the acid pre-extraction treatment (ii) using different acid treatments so the **calcium** ions exchanged varied from 83% to 4%. The use of formalin treatment gave a product with less color. During the acid pre-extraction treatment, it was possible to reduce the **calcium** exchanged from 33.4% to almost zero with a maximum reduction in **alginate** yield of 7%. The degree of acid treatment was pos. correlated to **calcium** exchanged and yield but neg. correlated with **alginate** **viscosity.** Using strong acid conditions the **viscosity** was 168 mPa, while mild acid conditions produced an **alginate** with 623 mPa. The direct extraction from **calcium alginate** to sodium **alginate** is possible because strong alkaline conditions were used, **pH** 10 at 80°C for two hours and with a low water volume The best pre-extraction treatment to obtain an **alginate** with high **viscosity** is to hydrate the alga with 0.1% formalin overnight, then wash the alga once with hydrochloric acid at **pH** 4 using a batch system with continuous agitation during 15 min.

L11 ANSWER 31 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1999:283660 Document No. 131:92431 **Calcium alginate** microparticles for oral administration: I: effect of sodium **alginate** type on drug release and drug entrapment efficiency. Takka, S.; Acarturk, F. (Department of Pharmaceutical Technology, Faculty of Pharmacy, Gazi University, Ankara, 06330, Turk.). Journal of Microencapsulation, 16(3), 275-290 (English) 1999. CODEN: JOMIEF. ISSN: 0265-2048. Publisher: Taylor & Francis Ltd..
AB The natural polymers **alginate** and chitosan were used for the

preparation of controlled release nicardipine-HCl gel microparticles. The effect of the mannuronic/guluronic acid content and the **alginate viscosity** on the prolonged action of the microparticles, which were prepared with different types of alginates, were investigated. The mean particle sizes and the swelling ratios of the microparticles were also determined The in vitro release studies were carried out with a flow-through cell apparatus in different media (**pH** 1.2, 2.5, 4.5, 7 and 7.5 buffer solns.). The release of nicardipine was extended with the **alginate** gel microparticles prepared with guluronic acid-rich **alginate.** After the determination of the most appropriate **alginate** type, the effect of **alginate**-chitosan complex formation was studied on the release pattern of drug incorporated. The **alginate**-chitosan complex formation reduced the erosion of the **alginate**-chitosan matrix at **pH** 7-7.5. The release of drug from the chitosan-**alginate** gel microparticles took place by both diffusion through the swollen matrix and relaxation of the polymer at **pH** 1.2-4.5.

L11 ANSWER 32 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1998:723805 Document No. 130:7417 Novel heteropolysaccharide conjugates, novel s-INP (semi-interpenetrating network) polysaccharide gels, and their preparation and use. Mares-Guia, Marcos; Ricordi, Camillo (Biomm, Inc., USA). PCT Int. Appl. WO 9849202 A1 19981105, 59 pp. DESIGNATED STATES: W: BR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US8752 19980430. PRIORITY: US 1997-45111 19970430; US 1997-877682 19970617.
AB A composition including ≥1 glycosaminoglycan (especially one without defined cell-binding properties, such as chondroitin sulfate) and ≥1 **alginate** (e.g. Na **alginate**), wherein the glycosaminoglycan and/or the **alginate** are crosslinked or polymerized, or the glycosaminoglycan and **alginate** are covalently bound (as "Biodritin heteropolysaccharide"), is provided for preparing biocompatible solns. having adjustable **viscosity**, sols, or gels, e.g. for microencapsulation of cells or tissues for therapeutic use. The **viscosity** of the solution or gel is adjusted by manipulating the concentration of the heteropolysaccharide and/or of crosslinking inorg. ions such as Ca2+; the ionically linked polysaccharides are believed to form s-INPs. The polysaccharides can be covalently crosslinked, e.g. with divinyl sulfone, under conditions which protect the Ca2+-binding sites of **alginate** with Ca2+; remaining vinyl groups can be eliminated by reaction with an alkanolamine at alkaline **pH**, and Ca2+ can be removed with a chelating agent such as EDTA. Alternatively, the polysaccharides can be crosslinked dehydrothermally in a freeze-dried cake. Biodritin products can be applied to wounds or sutures by painting or spraying, and can be used to coat surgical and monitoring equipment to prevent local reactions, injury, or irritation. Thus, a 0.5-3.0% Biodritin heteropolysaccharide solution containing pancreatic islet cells was aspirated into catheter tubing containing a longitudinal cotton thread and extruded into a CaCl2 solution, which produced a cylindrical gel around the thread ("Biodritin spaghetti"). The spaghetti was hardened by further incubation in CaCl2 solution for 5-40 min; an outer membrane was then formed by incubation in 0.5% poly-L-lysine solution to produce a Biodritin-polylysine complex at the surface. The spaghetti can be used as a biocompatible islet cell implant.

L11 ANSWER 33 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1998:434960 Document No. 129:127066 Formulation and characterization of **calcium alginate** beads containing ampicillin. Torre, Maria Luisa; Giunchedi, Paolo; Maggi, Lauretta; Stefli, Rosanna; Machiste, Evelyn Ochoa; Conte, Ubaldo (Dipartimento di Chimica Farmaceutica, Universita di Pavia, Pavia, 27100, Italy). Pharmaceutical Development and Technology, 3(2), 193-198 (English) 1998. CODEN: PDTEFS. ISSN: 1083-7450. Publisher: Marcel Dekker, Inc..
AB The purpose of this work was the preparation and characterization of

calcium alginate beads containing ampicillin. Aqueous solns. of drug and sodium **alginate** (3 **viscosity** grades) were added drop by drop to aqueous solns. of **calcium** chloride; the droplets instantaneously formed gel beads, which were then dried. Morphol. studies and drug contents, in vitro release, and erosion tests were carried out for the characterization of the prepared beads. The dried particles were characterized by irregular shape and a smooth or rough surface, depending on the **viscosity** grade of the **alginate** used. The control of the drug for different time intervals depended on the mol. weight of the polymer used; however, the **pH**-change test showed that this capacity was much lower in the case of acid-treated particles. The ampicillin beads prepared are suitable for intramammary therapy.

L11 ANSWER 34 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1998:191506 Document No. 128:193924 The properties and application of high DS carboxymethyl starch. Wu, Zongwen; Cui, Guoshi; Wang, Qing (Isotope Inst., Acad. Scis. Henan Province, Zhengzhou, 450052, Peop. Rep. China). Zhengzhou Liangshi Xueyuan Xuebao, 18(3), 81-85 (Chinese) 1997. CODEN: ZLXUEN. ISSN: 1000-2332. Publisher: Zhengzhou Liangshi Xueyuan Xuebao Bianjibu.
AB The high DS CMS was better than low DS CMS in properties of acid resistance, Ca2+ and Mg2+ resistance, heat resistance, anti-biodegradability and color yield of active dye and so on. It has good environmental adaptability and applied behavior and could resist high temperature up to 150°, 20° higher than low-DS CMS as used in drilling mud. It is a perfect substitute of sodium **alginate** as a print paste for active dye and could be also used in the media of lower **pH** or higher concentration of Ca2+ and Mg2+. Its aqueous solution could hardly decay and has a stable **viscosity** for a long time, therefore it can be used in paint, oil field, drink and adhesives etc.

L11 ANSWER 35 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1998:118734 Document No. 128:205642 Aqueous adhesives with improved initial adhesion and their manufacture. Shimizu, Kunio; Iwasaki, Kinji; Yanaida, Akiko; Oshima, Hiroyuki (Daicel Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10046132 A2 19980217 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-203934 19960801.
AB Title adhesives comprise aqueous emulsions containing COOH-containing polymers (A) and 0.001-25% (preferably, based on 100 parts A) water-soluble polyvalent metal compds. selected from transition metal, Group 2, Group 13, and Group 14 elements. A 100 parts 55.0% aqueous emulsion containing poly(vinyl acetate) and 0.801 part Na **alginate** was mixed with 15% aqueous solution of poly(vinyl alc.) 25, 5% aqueous solution of K Al sulfate 0.14, and DBP 9 parts to form an adhesive with solid content 49.7%, **pH** 4.3, and **viscosity** 1640 cP, which was spread on a 84-g/m2 kraft paper to a 40-g/m2 thickness, left at 20° and 65% relative humidity for 0.1 s, and pressed for 0.1 s to show initial adhesion (300-mm/min shear rate) 0.045 kg.

L11 ANSWER 36 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1998:9354 Document No. 128:119543 New capsule with tailored properties for the encapsulation of living cells. Lacik, I.; Brissovi, M.; Anilkumar, A. V.; Powers, A. C.; Wang, T. (Ceinterfor Microgravity Research and Applications, Vanderbilt University, Nashville, TN, 37235, USA). Journal of Biomedical Materials Research, 39(1), 52-60 (English) 1998. CODEN: JBMRBG. ISSN: 0021-9304. Publisher: John Wiley & Sons, Inc..
AB A new capsule for the encapsulation and transplantation of pancreatic islets has been developed. PFive active ingredients are involved in the capsule formation process: high **viscosity** sodium **alginate** (SA-HV), cellulose sulfate (CS), poly(methylene-co-guanidine) hydrochloride (PMCG), **calcium** chloride, and sodium

chloride. Complexation reaction exhibits several unique features: (1) solution of SA-HV with CS represents a phys. mixture of two entangled polyanions that provide both **pH**-sensitive (carboxylic) and permanently charged (sulfate) groups; (2) presence of CaCl2 in the cation solution ensures formation of the gelled bead after the drop of polyanion solution is immersed in the cation solution; (3) character of the polycation (PMCG), i.e., low mol. weight and unusually high charge d., combines both high mobility and reactivity; (4) presence of PMCG in cation solution, together with CaCl2, gives rise to the competitive binding of these two cations based on their diffusion and affinity towards the anion groups; and (5) NaCl provides the anti-gelling sodium ions that significantly affect the reaction of CaCl2 with the polyanion matrix, thus altering the final properties of the capsule surface, shape, and permeability. The capsule size, mech. strength, membrane thickness, and permeability can be precisely adjusted and quantified. We believe that the capsule characteristics can be optimized in the next step to meet the biol. criteria. The initial transplantation results suggest that this capsule is biocompatible and noncytotoxic and is a promising candidate for the immunoisolation of cells such as pancreatic islets.

L11 ANSWER 37 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1997:87243 Document No. 126:130671 Effects of high pressure on dairy proteins: a review. Cheftel, J.C.; Dumay, E. (Unite de Biochimie et Technologie Alimentaires, GBSA, Universite de Montpellier II, Montpellier, 34095, Fr.). Progress in Biotechnology, 13(High Pressure Bioscience and Biotechnology), 299-308 (English) 1996. CODEN: PBITE3. ISSN: 0921-0423. Publisher: Elsevier.

AB A review with 41 refs. Milk processing at 150-400 MPa causes some irreversible fragmentation of casein micelles, together with **calcium** release, increased milk **viscosity**, decreased milk turbidity, and decreased noncasein nitrogen. The exact changes in individual caseins and whey proteins are not known, but milk pressurization accelerates subsequent casein coagulation by rennet or glucono-δ-lactone, and enhances the strength and water-holding capacity of acid-set gels. Processing solns. of β-lactoglobulin (β-Lg) in the same high pressure range causes partial structure denaturation. β-Lg unfolding is more extensive and irreversible at neutral than at acid **pH**. Above 1% protein, pressure also induces significant β-Lg aggregation into soluble oligomers and polymers linked both by hydrophobic interactions and disulfide bonds. The latter form mainly through SH/S-S interchange reactions. β-Lg proteolysis by thermolysin (**pH** 7), trypsin or chymotrypsin (**pH** 8) or pepsin (**pH** 4) is enhanced under pressure, apparently because of pressure-unfolding of β-Lg. Above 7% or 11% protein, processing at 300-400 MPa and 20-30° induces the gelation of β-Lg isolate or whey protein concentrate, resp. Pressure-induced gels (P-gels) are markedly weaker, less elastic and more exudative than corresponding thermal gels (T-gels) (80-90°, 30 min). Both β-Lg aggregation and gelation are influenced by pressure level, **pH**, type of buffer used, time under pressure, and presence of additives. P-gels (from 10-14% protein solns.) display a coarsely aggregated spongious texture and a coral-like microstructure with large "pillars" and pores, in contrast to the smooth texture, small protein aggregates and fine branched strands of T-gels. The presence of 5-15% sucrose or 0.1-0.9% weight/weight polysaccharide (depending on whether pectin, **alginate** or xanthan is used) reduces or prevents exudation and cancels the spongious texture and porous structure of P-gels. Potential applications of high pressure to dairy products are discussed.

L11 ANSWER 38 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1995:997085 Document No. 124:64287 Slips for manufacturing composite ribbons of oriented particles. Carisey, Thierry; Brandon, David; Mace, Jacques (ELF Atochem SA, Fr.). Fr. Demande FR 2718431 A1 19951013, 11 pp. (French). CODEN: FRXXBL. APPLICATION: FR 1994-4244 19940411.

AB The process comprises a powdered matrix material, particles, a gel-forming

colloid, dispersant, and, optionally, a dopant, to form a ribbon of oriented particles. A mixture consisting of 2.5 g tabular α-Al2O3 (diameter 3-7; thickness 0.6-1 μm), 67.4 mg Cr(OAc)3, 75 mg Mg(NO3)2, 0.753 g Na **alginate**, 0.5 g Dolapix PC 85 (dispersant), and 45.8 g distilled water was ball-milled for 2 h, and the **pH** periodically adjusted to 10 with NH4OH. The mixture was mixed with 97.36 g AKP-50 (α-Al2O3) powder (purity 99.%; sp. surface area 9-15 m2/g; particle size 0.1-0.3 μm) and ball-milled for 20 h to obtain a slip having **viscosity** 10 Pa.s. The slip was cast to obtain a ribbon (length 1 m, width 6, thickness 1 mm) of oriented particles.

L11 ANSWER 39 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1995:958525 Document No. 124:15500 Topical ophthalmic pharmaceutical vehicles comprising water-soluble polymers and positively charged electrolytes. Ali, Yusuf; Reed, Kenneth W. (Alcon Laboratories, Inc., USA). U.S. US 5461081 A 19951024, 6 pp. Cont.-in-part of U.S. Ser. No. 109,748, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1994-178941 19940107. PRIORITY: US 1989-414550 19890928; US 1992-913110 19920714; US 1993-109748 19930820.

AB Universal ophthalmic pharmaceutical vehicles which increase in **viscosity** upon instillation in the eye are disclosed. In one embodiment, the vehicle gels upon instillation in the eye. In another embodiment, suspension vehicles having superior phys. stability are provided. An ophthalmic suspension contained rimexolone 1.0, mannitol 1.80, Carbopol 934P 0.45, Polysorbate 80 0.05, NaCl 0.05, NaCl 0.50, Na2EDT 0.01, benzalkonium chloride 0.01+5% excess, NaOH **pH** = 7.2, and water q.s. 100%.

L11 ANSWER 40 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1995:846015 Document No. 123:337541 Production of **alginate** beads by emulsification/internal gelation. Part 2. Physicochemistry. Poncelet, D.; De Smet, B. Poncelet; Beaulieu, C.; Huguet, M. L.; Fournier, A.; Neufeld, R. J. (INRS-Sante, Univ. Quebec, Pointe-Claire, QC, H9R 1G6, Can.). Applied Microbiology and Biotechnology, 43(4), 644-50 (English) 1995. CODEN: AMBIDG. ISSN: 0175-7598. Publisher: Springer.

AB **Alginate** microspheres were produced by emulsification/internal gelation of **alginate** sol dispersed within vegetable oil. Gelation was initiated within the **alginate** sol by a reduction in **pH** (7.5 to 6.5), releasing **calcium** from an insol. complex. Smooth, spherical beads with the narrowest size dispersion were obtained when using low-guluronic-acid and low-**viscosity** **alginate** and a carbonate complex as the **calcium** vector. A more finely dispersed form of the complexed **calcium** within the **alginate** sol promotes a more homogeneous gelation. Microsphere mean diams. ranging from 50 μm to 1000 μm were obtained with standard deviations ranging from 35% to 45% of the mean.

L11 ANSWER 41 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1995:824557 Document No. 123:226011 Batch and continuous flow systems during the acid pre-extraction stage in the **alginate** extraction process. Arvizu-Higuera, Dora Luz; Hernandez-Carmona, Gustavo; Rodriguez-Montesinos, Y. Elizabeth (Centro Interdisciplinario de Ciencias Marinas, La Paz, 23000, Mex.). Ciencias Marinas, 21(1), 25-37 (English) 1995. CODEN: CIMAD7. ISSN: 0185-3880. Publisher: Instituto de Investigaciones Oceanologicas de la Universidad Autonoma de Baja Ca.

AB Acid pre-extraction in the production process of alginates was investigated in two stages using Macrocystis pyrifera as raw material. In the first stage, the possibility of reducing the normality of the hydrochloric acid used in a continuous flow system was tested by varying the concentration of the acid between 0.2 and 0.006N. The percentage of **calcium** ions exchanged was considered as the variable response. It was found that with this system it is possible to use 0.05N as the min. concentration of hydrochloric acid without affecting the **alginate** yield. In the second stage,

the continuous flow system using the conditions established in the first stage was compared to a three batch system at **pH** 4. It was found that the continuous flow system exchanges 76% of the ions present in the algae, while the batch system exchanges 50%. There is no significant difference in the yield, but the quality of the alginates, measured in terms of **viscosity**, is 55% greater using the batch system. The use of the batch system reduces hydrochloric acid consumption by 85.9%, water consumption by 25% and therefore reduces production costs.

L11 ANSWER 42 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1995:677554 Document No. 123:290016 Recording fluids for jet-printing. Yasutomi, Hideo; Ueda, Hideaki (Minoruta Kk, Japan). Jpn. Kokai Tokkyo Koho JP 07109431 A2 19950425 Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-255925 19931013.
AB The recording fluids with good dispersibility of coloring materials, nozzle clogging resistance, storage stability, and fixability contain nonaq. solvents with b.p. ≥150° as the dispersants, 1-20% coloring materials, 0.01-10% resins having solubility in the dispersants, and 0.001-5% ≥1 additives selected from **alginate** salts, borneol derivs., cellulose derivs., and polysaccharides. Thus, 2 g Mogul L and 20 g a polyester were dissolved in CH2Cl2 to give a polymer solution, which was added to an aqueous dispersion containing 5.0 g Metolose 655H50 (cellulose derivative) and Na dodecylbenzenesulfonate and then CH2Cl2 was removed to give a coloring material. An ink containing triethylene glycol mono-Bu ether (b.p. 271°) 93.5, the coloring material 5.0, BL 1 (butyral resin) 1.5, and borneol 0.003% showed **viscosity** 10.5 cP and surface tension 29.4 dyne/cm.

L11 ANSWER 43 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1991:452167 Document No. 115:52167 Effects of **calcium** ion and **pH** value on the rheological properties of sodium **alginate** solution. Chen, Zongqi; Wang, Ninghua; Han, Ensan; Chen, Juan; Wang, Guangxin (Dep. Appl. Chem., Qingdao Inst. Chem. Technol., Qingdao, 266042, Peop. Rep. China). Huaxue Xuebao, 49(5), 462-7 (Chinese) 1991. CODEN: HHHPA4. ISSN: 0567-7351.
AB Na **alginate** (I) solution showed non-Newtonian behavior at high **viscosity.** The rheol. of I solution was described as a function of shear gradient, temperature, **pH** value, and added salt concentration The addition of Ca2+ gave insol. I; the **viscosity** of I increased and thioxotropy was observed in the presence of small amount of Ca2+. Neg. thixotropy of I was observed in certain Ca2+ concentration

L11 ANSWER 44 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1990:610274 Document No. 113:210274 Effect of formaldehyde pre-treatment on the intrinsic **viscosity** of **alginate** from various brown seaweeds. Wedlock, D. J.; Fasihuddin, B. A. (Sittingbourne Res. Cent., Shell Res. Ltd., Sittingbourne/Kent, ME9 8AG, UK). Food Hydrocolloids, 4(1), 41-7 (English) 1990. CODEN: FOHYES. ISSN: 0268-005X.
AB Sodium **alginate** samples were extracted from brown seaweeds by various methods, and the effect of the extraction procedure on the intrinsic **viscosity** and, by implication, the mol. weight were studied. Pre-treating the weeds with formaldehyde and ethanol prior to extraction with sodium carbonate or extracting the weeds under neutral conditions with selected **calcium** ion sequestrants resulted in alginates with enhanced intrinsic viscosities. The intrinsic **viscosity** of **alginate** samples during extraction decreases significantly with increasing **pH** due to the presence of phenolic compds. By isolating the phenolic compds. with formaldehyde or extracting them with ethanol, degradation processes can be inhibited.

L11 ANSWER 45 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1989:445186 Document No. 111:45186 A novel approach to the oral delivery of micro- or nanoparticles. Bodmeier, Roland; Chen, Huagang; Paeratakul, Ornlaksana (Coll. Pharm., Univ. Texas, Austin, TX, 78712-1074, USA). Pharmaceutical Research, 6(5), 413-17 (English) 1989. CODEN: PHREEB.

ISSN: 0724-8741.

AB A novel oral multiple-unit dosage form which overcame many of the problems commonly observed during the compression of microparticles into tablets was developed in this study. Micro- or nanoparticles were entrapped in beads formed by ionotropic gelation of the charged polysaccharide, chitosan or Na **alginate**, in solns. of the counterion, tripolyphosphate (TPP) or CaCl2, resp. The described technique did not change the phys. properties of the microparticles, and it allowed a high microparticle loading (up to 98%). The ionic character of the polymers allowed **pH**-dependent release of the microparticles. Chitosan beads disintegrated and released the microparticles in 0.1N HCl, while Ca **alginate** beads stayed intact in 0.1N HCl but rapidly disintegrated in simulated intestinal fluids. Coating the Ca **alginate** beads with cellulose acetate phthalate resulted in an enteric drug delivery system. SEM and dissoln. and disintegration tests were used to characterize the microparticle-containing beads. The disintegration time of the beads was studied as a function of the solution **viscosity** of the polysaccharide, gelation time, counterion concentration, and method of drying.

L11 ANSWER 46 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1989:438269 Document No. 111:38269 Alcohol-, fat-, and protein-containing foam-forming product stabilized with **calcium** and polyphosphates. Evers, Paulus Hendricus Johannes Maria (Neth.). Neth. Appl. NL 8700955 A 19881116, 6 pp. (Dutch). CODEN: NAXXAN. APPLICATION: NL 1987-955 19870422.

AB A foamed food product containing protein, fat, and alc., in which the alc. has a destabilizing effect, is stabilized by addition of a polyphosphate (e.g. Na hexametaphosphate) and a Ca source (e.g. an ultrafiltrate of milk). A mixture of distilled monoglycerides 1.80, monoglyceride lactate 9.50, monoglyceride acetate 6.80, and cocoa butter 67.50 g at 80° was combined with a mixture of powdered cream 45.00, Na caseinate 10.80, BHA + BHT 0.10, and water 200.00 g at 80° and homogenized. Then a mixture of water 160.00, milk salts and polyphosphates 0.54, tri-Na citrate 0.90, low-**viscosity** propylene glycol **alginate** (I) 1.26, high-**viscosity** I 0.27, and high-mol.-weight citrus pectin 1.80 g at 85° was added followed by glucose 40.50, sucrose 180.00, and hydrolyzed corn starch 180.00 g, and the mixture was cooled to 5°. After 1 h stirring, 96% alc. 123.90, water 157.00 g, coloring, and flavoring were added followed by glucono-δ-lactone 3.00 g, and the **pH** was adjusted to 5.0-5.1 with a tartaric-ascorbic-malic acid mixture 0.10 g. The product, which could be beaten to a foam, was homogenized and remained stable for ≥1 yr.

L11 ANSWER 47 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1989:428569 Document No. 111:28569 Pharmaceutical controlled-release tablets containing basic drugs having **pH**-independent drug release. Howard, John R.; Timmins, Peter (E. R. Squibb and Sons, Inc., USA). U.S. US 4792452 A 19881220, 5 pp. (English). CODEN: USXXAM. APPLICATION: US 1987-78505 19870728.

AB A controlled-release pharmaceutical formulation from which a basic drug is released independently of the **pH** of the environment comprises the drug, 15-45 weight% **pH**-dependent polymer which is an alginic acid salt with a **viscosity** of 4-500 cP in 1% solution at 25°, 3-35 weight% **pH**-independent hydrocolloid gelling agent having a **viscosity** of 50-100,000 cP in 2% solution at 20°, and a binder; the formulation is Ca ion-free. A sustained-release tablet contained verapamil-HCl 240, Na **alginate** (300 cP) 135, Methocel E4M (4000 cP) 45, Avicel **pH** 101 33.2, lactose 8.3, Methocel E5 (binder) 9.0, and Mg stearate 4.5. This table underwent slow and uniform release of drug over 15 h, regardless of the **pH** of the environment.

L11 ANSWER 48 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1988:637026 Document No. 109:237026 Pharmaceutical formulations containing

cimetidine. Carlin, Brian Anthony Christopher; Healey, John Norman Charles; Leonard, Graham Stanley; Tovey, Geoffrey David (Smith Kline and French Laboratories Ltd., UK). PCT Int. Appl. WO 8800825 A1 19880211, 27 pp. DESIGNATED STATES: W: AU, DK, HU, JP, KR. (English). CODEN: PIXXD2. APPLICATION: WO 1987-GB539 19870729. PRIORITY: GB 1986-18847 19860801.

AB A stable pharmaceutical composition suitable for oral administration comprises a suspension of particulate cimetidine (I) in an aqueous phase having a **pH** of >7, and a suspending agent, wherein substantially all of the I present is of the polymorphic B form, and optionally any other pharmaceutical excipients. A suspension contained I (polymorph B) 120, Avicel RC 591 90, water 1500, propylene glycol 300, glycerol 300, butylparaben 6, propylparaben 3, Na saccharin 2.4, vanilla 3.0, cream 6.0, TiO2 50% in glycerol 24, sorbitol 3460, and water 1480g. The apparent **viscosity** of the suspension at 27° and 0.7/s was 700 mPa.s. After storage at room temperature for 5 mo., the suspension showed filaments of 750 μm in length. Preparation of I polymorph B from polymorph A is demonstrated.

L11 ANSWER 49 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1968:67806 Document No. 68:67806 Influence of **calcium** and **viscosity** upon the swelling of algin-jelly in an acid-containing sucrose solution. Kasahara, Fumio; Kobayashi, Mitsugu; Hamano, Tamae (Kimitsu Chem. Ind. Co., Tokyo, Japan). Nippon Shokuhin Kogyo Gakkaishi, 14(7), 304-7 (Japanese) 1967. CODEN: NSKGAX. ISSN: 0029-0394.

AB Acid jelly containing 40-70% Ca **alginate** maintained good texture between **pH** 2.4 and 2.8. The use of Na **alginate** which had >730 cp./1% solution gave a good jelly at **pH** 3-4.

L11 ANSWER 50 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1968:4191 Document No. 68:4191 Heat-resistant **alginate** gels. Freedman, John C. (Kelco Co.). U.S. US 3349079 19671024, 3 pp. (English). CODEN: USXXAM. APPLICATION: US 19640406.

AB An **alginate** is prepared that does not lose its **viscosity** to a substantial degree when used at >200°F. The **alginate** is useful in hot calender sizing solns. in the paper industry. Thus, wet alginic acid containing 20% solids was slurried with iso-PrOH to give a 1:1 H2O-iso-PrOH mixture, treated with enough CaCO3 to neutralize 35% of the alginic acid, mixed for 20 min., treated with enough Na2CO3 to neutralize the remaining alginic acid, mixed for 20 min. to give a neutral **pH** , and pressed to remove the iso-PrOH and H2O from the fibrous product, which was dried for 1.5 hrs. at 120°F. and milled to 60-mesh. A 1% aqueous solution of the product had an initial **viscosity** of 5300 cp. and 5800 cp. **viscosity** after being heated for 2 hrs. at 200°F.

L11 ANSWER 51 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

1963:81929 Document No. 58:81929 Original Reference No. 58:14083f-g Complexes of depolymerized alginic acid derivatives. Dodd, C. G.; Maus, L. (Cherokee Laboratories, Inc.). BE 619267 19621015, 39 pp. (Unavailable). PRIORITY: US 19610622.

AB Na **alginate** is depolymerized and the product obtained is treated with transition metal ions, Sr++, and Ca++ to give complexes which can be used in the preparation of hematinic medications. Na **alginate** (100 g.) is suspended in 3500 ml. H2O, 8 ml. 30% H2O2 added, the mixture heated from room temperature to 50° in 1 hr., heated to 90° in 31/2 hrs. as 1000 ml. H2O evaps., an equal volume of iso-PrOH added to the reaction mixture, and the liquid decanted. H2O (900 ml.) is added to the precipitate, 3N NaOH added to **pH** 10-12, and the precipitate filtered off to give a filtrate containing the depolyrnerized **alginate**, **viscosity** 1.2 cp. (25°), intrinsic **viscosity** 0.10. NaOH (10 g.) is heated with the filtrate, 20 g. FeCl3.6H2O added, 5 g. NaOH added at 90-5°, 10 g. FeCl3.6H2O added, and 5 g. addnl. NaOH added. FeCl3.6H2O (10 g.) added, sufficient NaOH added to give **pH** 13,

the mixture refluxed gently for 15 min., the solution evaporated to give 5% (by weight) Fe, 2 vols. iso-PrOH added, and precipitation gives the Fe complex of depolymerized Na **alginate.** Similarly prepared are complexes of depolymerized Na **alginate** and Ca, Zn, Ni, Sb, Sr, and Co.

L11 ANSWER 52 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1959:52636 Document No. 53:52636 Original Reference No. 53:9497a-c
Information and evaluation of alginates. I. Diemair, Willibald; Weichel, Hans Hermann (Univ. Lebensmittelchem., Frankfurt a.M., Germany). Deutsche Lebensmittel-Rundschau, 54, 51-5,76-9 (Unavailable) 1958. CODEN: DLRUAJ. ISSN: 0012-0413.
AB Characteristics and evaluation of 74 com. alginates (I) are reviewed with regard to taste, color, presence of foreign material, chemical composition, phys. properties, and presence of heavy metals. Structure, coarseness, and color are considered important. They should be colorless, tasteless, flavorless, and have good solubility The **pH** values of 1% solns. of the products were: ammonium alginates 3.5-5.4, alginic acid amides 6.4-6.9, alginic acid propylene glycol esters 3.5, and alginates in general 5.3-10.4. Since these are used in small quantities in food the variation in **pH** is unimportant. The low-, medium-, and high-**viscosity** samples had the following mol. wts., resp.: 12,100-80,000, 80,000-120,000, and 120,000-190,000. Insol. residue should be less than 2%. The insol. residues contained alginic acid, Ca **alginate**, and cell fragments of brown algae. Moisture contents were 12.2-37.8 (average 20%), mineral content 13.1-28.4%. Spectrographic analyses show the presence of Na+, Ca++, Mg++, Fe++, Zn++, and PO4---. Among these only Fe and Zn are undesirable in food applications.

L11 ANSWER 53 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
1948:33284 Document No. 42:33284 Original Reference No. 42:7077b-f,7078a-f
The use of salts in the finishing of sole-leather bends. I. The precipitation of tannins by salts. Bowes, J. H. (British Leather Manufacturers' Research Assoc., London). Journal of the Society of Leather Trades' Chemists, 32, 224-41 (Unavailable) 1948. CODEN: JSLTAX. ISSN: 0037-9921.
AB This work was done to find out why the usual treatment with MgSO4 and sucrose or glucose, after tanning in strong liquors, prevents surface deposition of tannin on drying and eliminates cracky grain. Precipitation of tannins by salts was studied by adding 25 ml. of M or saturated salt solution to 50 ml. tannin extract solution (sp. gr. 1.050 and 1.100) and estimating precipitated matter by the difference between the Lowenthal permanganate titration figures of the initial and final solution clarified by sedimentation. Tannins studied were chestnut (I), valonea (II), myrobalans (III), mimosa (wattle) (IV), gambier (V), quebracho (VI), mangrove (VII), eucalyptus (VIII), and tannic acid (sp. gr. 1.080) (IX), all at **pH** = 3.5. Results are given as percentage total oxidizable material precipitated The ppts. produced by saturating MgSO4 redissolved almost completely in H2O, leaving a small insol. residue believed to be Mg tannate, and in EtOH leaving a residue of MgSO4. Precipitation tests at low MgSO4 concns. at various **pH** values showed that Mg tannate does not precipitate below **pH** = 4. Precipitation at high salt concns. is predominantly a salting-out effect, but with MgSO4 the **pH** value falls on precipitation, indicating some Mg tannate formation. Treatment of I and VII with M salts (0.33 M after mixing) gave relatively little precipitate VII gave irregularly higher precipitation values than I. A few salts gave neg. values, i.e., peptized some natural insol. matter (NaF with VII; NaBr, Ca(NO3)2 with I). The Hofmeister series was not followed. Precipitation values with VII were: For Na salts, NaF -3.2, NaBr 1.2, Na2SO4, NaClO3, NaNO3, Na phosphate 7 to 8.2, NaCl 14.5; for chlorides, KCl, NaCl, CaCl2, MgCl2,

13.9 to 17.7; for sulfates, Na2SO4 7.0, (NH4)2SO4 8.9, ZnSO4 11.4, MgSO4 12.0, Al2(SO4)3 35.5; for nitrates, Ca(NO3)2 4.5, NaNO3 8.9. Relative precipitating action of these salts on I was similar but not identical. Treatment of all the tannins with saturated solns. of 20 different salts (the above (except NaBr and KCl) and NaOAc, Mg(NO3)2, K Al sulfate, NH4 Al sulfate, Pb nitrate, AlCl3, and Pb(OAc)2) (1/3 saturated after mixing) gave highly irregular results. The order of effectiveness of the salts varied greatly with the tannin employed. With numerous exceptions, VI to IX gave more precipitate than I to V. In general, chlorides were more effective than sulfates, nitrates, chlorates, acetates and phosphates, and Mg and Al salts were more effective than NH4, Na, and Ca compds. A vague correlation was found between the supposed mol. wts. of the tannins (C.A. 31, 7282.4) and percentage precipitated by MgSO4. Precipitation of IX by saturated MgSO4 solution (1/2 saturated after mixing) was inhibited completely by presence in the mixture of 2.5% EtOH or C2H4(OH)2, 5% of C3H5(OH)3 or Me2CO, 10% of sucrose or urea, and 25% glucose. Presence of these compds. in mixts. of I, IV, and VII with saturated MgSO4 solution reduced the amount of precipitate but did not wholly prevent precipitation even at 2 to 4 times the above concns. The function of sucrose in treating sole leathers with strong tannin solution and MgSO4 appears to be a retardation of precipitation, thus preventing the clogging of the interfibrillar spaces at the leather surfaces. When saturated MgSO4 solution was treated with strong tannin solution in 0.3 mm. capillary tubes, a clot formed at the liquid interface. Clot formation was prevented by presence of 20% sucrose, glucose, glycerol or C2H4(OH)2 in the MgSO4 solution The effect is not due to increased **viscosity**, since presence of Na **alginate** did not modify the precipitation Pieces of leather were immersed in saturated solns. of 21 salts. Bleeding of tannin was estimated from the color of the solns., and the color of the leather after drying was noted. Leather color bore no relation to tannin removal. Light-colored leathers resulted from treatment with MgSO4, MgCl2, CaCl2, and Calgon; fairly light with Na2HPO4, ZnSO4, Mg(NO3)2, (NH4)2SO4, and Al2(SO4)3. Pb(OAc)2, NaCl, Ca(NO3)2, AlCl3, K alum, Na2SO4, NaNO3, Pb(NO3)2, NH4 alum, NaClO3, NaF, and NaOAc produced varying degrees of darkening. Al compds. produced yellowish, and Zn gave gray tints. Sucrose in absence of salts prevented bleeding of tannin. Addition of glucose, sucrose, C2H4(OH)2, and C3H5(OH)3 to MgSO4 solution further lightened the leather shade, the effect decreasing in the above order. Addition of sucrose to solns. of salts lightened the leather shade in all cases except with MgCl2. Na **alginate** had no effect. The inhibiting effect of organic compds. on tannin precipitation by salts is ascribed chiefly to complex formation with the tannin or the salt, and possibly to increased degree of dispersion of the tannin.

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	148.26	214.41

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-36.73	-36.73

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